Intermarriage and Spouse Import in the Immigrant Population of Norway

The Influence of National-Origin Group, Educational Level,Generation, Gender and Age at marriage

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MA Thesis

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Abstract

This thesis is a pioneering analysis of the intermarriage and spouse import of immigrants and their descendants in Norway, combining multivariate statistical techniques and mechanism-based theoretical explanations. Using register data on the complete stock of immigrants and descendants who have married in Norway in the period of 1973-2002 (*N=55,293*), I explore the degree to which national-origin groups differ in their spouse selection, and I model the influence of other individual-level characteristics such as educational level, generation, gender, and age at marriage (and control for place of residence and length of stay before marriage) on both intermarriage and spouse import. Regressions are run for the whole immigrant population, separately for men and women of both generations, and for a subset of national-origin groups: Moroccans, Turks, Indians, Pakistanis and Vietnamese (and for the intermarriage analyses, Danes).

First, I present contingency tables of national-origin and spouse selection outcome. Among both generations, the national-origin groups of Western Europe and North America have the highest intermarriage rates, and Middle Eastern and South Asian groups display the lowest mean intermarriage rates and the highest spouse import rates. In general, men are considerably more prone to spouse import than women. Among immigrants marrying in Norway, women tend to intermarry more than men, but among descendants, men intermarry more than women. Male descendants intermarry more than male immigrants, while female immigrants intermarry more than female descendants.

Second, I report multinomial logit models for intermarriage. The analyses show that the positive relationship between educational level and intermarriage is much lower than that indicated by models from previous research treating the immigrant population as one group, and without controlling for age at marriage. Educational level increases descendants' probability of intermarriage more than that of immigrants (and particularly for women). Higher age at marriage increases the chances of intermarriage for both immigrants and descendants, to the extent that controlling for age at marriage makes both male and female descendants more likely to intermarry than immigrants. While education has a clear positive bearing on the intermarriage rates of individuals from Vietnam, Turkey and India, and a minimal increase for Pakistanis and Moroccans, the same relationship is negative for Danes. Similarly, while descendants from Vietnam are more prone to marry a majority Norwegian than Vietnamese immigrants, the opposite is seen in the case of Moroccans and Indians.

Third, I report binomial logit models for spouse import among the endogamous. Again, the importance of controlling for age at marriage and national-origin group variation is confirmed. Still, higher educational attainment and age at marriage both decrease the probability of spouse import. On average, descendants are more likely to import spouses than immigrants. Moroccans and Vietnamese are less likely to import spouses the higher their educational level, while Pakistanis, Turks and Indians displayed no significant differences according to educational attainment. However, while descendants from Vietnam and Morocco are more likely to import than immigrants from the same countries, those with Turkish and Pakistani background display less propensity of finding a spouse in their country of origin than women from their parental generation.

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1. Introduction

Relationships are at the core of our existence as human beings. Among the many kinds of relations we depend on, the type established by romantic love and attraction is arguably the most powerful and fundamental of them all. Despite cultural and demographic changes during the last decades (i.e., the growth of unmarried cohabitation and divorce)[1], marriage is still the most common public expression of this relationship. Although the role of love and romance varies greatly between couples and cultures, choosing and being chosen as a spouse is a central life-event for people across the planet. However, attraction, love and other influences of spouse selection do not operate arbitrarily. Indeed, if weddings in Norway flourished *randomly*, most immigrants would marry Norwegians, most Muslims would marry Christians and atheists, and university graduates would be mixed in matrimonies with high school dropouts. From a scientific point of view, there are many aspects of this phenomenon that can be studied. One may investigate the fact that some unions endure and even become permanent, while others crumble at the first quarrel. Thus, many social scientists today study the *exit* aspect of couples: who is more likely to split up, and why?[2] One may also do research pertaining to the *entrance* aspect: who is more likely to get together?[3] Developing this project, some have focused on trends in spouse selection through

[1] The changes are part of what demographers call "the second demographic transition", which involves an increase in age at first marriage, more divorce, increase in remarriages and the spreading of unmarried cohabitation (Van De Kaa 1987; Wiik 2010).

[2] For a pertinent example of this research, see Kalmijn et al. (2005). Lyngstad and Jalovaara (2010) review the field.

[3] For a comprehensive review of this field, see Kalmijn (1998).

examining temporal changes in mating patterns (e.g. Mare 1991; Schwartz and Mare 2005), while others have emphasized the international variation, through cross-sectional comparisons (e.g. Jacobson and Heaton 2008). However, in the last decade, scholars have increasingly concentrated on the *input* of union formation: what influences the choice of a spouse?

This thesis asks questions of the latter type, focusing on immigrants and their descendants in Norway. Put simply, the study aims at three distinct goals of discovery. First, to uncover the degree to which national-origin groups vary with respect to their rates of intermarriage (exogamy), inmarriage (endogamy) and spouse import. Second, to test the general impact of individual characteristics shown to be correlated with these spouse selection outcomes in other national contexts: educational level, place of residence, generation, sex, age at marriage and length of stay. Third, the study discusses some explanatory *mechanisms* that might underpin the social processes generating the empirical patterns of the statistical analyses. Relying on population data from administrative registers (*N=55,293*), the analyses employ both descriptive statistics and logistic regression procedures.

The introductory chapter is a guide to this thesis. First, I present my research theme, and the questions guiding the study. Second, a scientific and societal justification is forwarded. Third, the limitations of the study are explicated. Fourth, a few words on frequently used notions and how they are defined. Finally, I round up this introduction by outlining the subsequent chapters of the thesis.

1.1 Research questions

For the sake of brevity, it is possible to condense my agenda into two main research questions: *How do endogamy, exogamy and spouse import rates differ between national-origin groups in the immigrant population of Norway? What influence do individual characteristics of immigrants and descendants have on these spouse selection rates?* As mentioned above, in addition to national-origin group the list of independent variables (measuring these characteristics) includes educational level, place of residence, generation, sex, age at marriage and length of stay. In essence, I seek an assessment of the degree to which these factors influence intermarriage and spouse import. To learn more specifically

about the research interests behind this thesis, the following paragraphs unpack a more precise set of questions.

People's partner choices are significantly influenced by their education. Although this thesis is not about educational homogamy, previous research has shown that level of education positively influences the likelihood of marrying someone from outside ones group, and negatively influences the likelihood of spouse import (although the evidence of this is mixed, see Lievens [1999] and Gonzalez-Ferrer [2006]). There is also some evidence suggesting that educational level influences spouse selection among immigrants and descendants in Norway (Daugstad 2009: 29). Hence, I ask:

1. *What is the impact of educational level on the intermarriage and spouse import of immigrants and descendants?*

There are internationally consistent findings of across-group and within-group differences between men and women in the propensity to intermarry (e.g. Jacobs and Labov 2002; Yancey 2002; Lie 2004; Okamoto 2007). While most groups display more male exogamy, in some Asian groups the women are more likely to marry out (Hwang et al 1997). This study seeks to establish both bivariate and multivariate assessment of these sex differences, both in intermarriage, spouse import and the impact of educational level on these outcomes:

2. *Are there differences in the intermarriage and spouse import between men and women? Is educational level less important for the spouse selection of men than for women?*

International research and assimilation theory (Gordon 1964) both indicate that being a descendant raises the likelihood that you enter an exogamous union. Descendants have been exposed to the majority throughout their upbringing, and their adult behavior is often considered a litmus test of social integration. Because of this, it is interesting to uncover both whether they intermarry and import differently from their parental generation, and whether the impact of education on these outcomes differs. Thus, I inquire:

3. *Are descendants more prone to intermarriage (and less prone to spouse import) than immigrants? Is education less important for the spouse selection of descendants than for immigrants?*

There is some evidence that age at marriage may influence intermarriage rates (Kulzycki and Lobo 2002; Hwang et al. 1997; Kalmijn and Van Tubergen 2010). There is also reason to think that age at marriage varies according to national-origin belonging and educational level. Thus, I ask:

4. *What is the impact of marital age on the probability of intermarriage and spouse import?*

Not all of the independent variables are represented by these research questions. Because of both the spatial and temporal limitations given when writing a master's thesis, some of the relevant independent variables of this study will function merely as statistical controls, and are thus not discussed thoroughly in the theoretical or the final chapter. However, the estimates of these variables will be commented on pertinent occasions, and the rationale for including them is briefly given below.

Previous research finds that time spent in the country has a positive effect on the likelihood of entering an exogamous marital union for immigrants (Kalmijn and Van Tubergen 2006; Dribe and Lundh 2008; Trilla et al. 2008), possibly because of increased language proficiency, cultural assimilation and simply more exposure to natives. Thus, the role of length of stay before marriage is controlled in the analyses of immigrants. Former studies (Blau et al. 1982 & 1984; Heaton and Jacobson 2000; Van Tubergen and Maas 2007) have documented that the spatial concentration of groups influence intermarriage patterns. In 2001, 55% of all non-western immigrants resided in the Oslo-area (Pettersen 2003: 9). Thus, the simple control for this phenomenon in my analyses is a dummy measuring whether the person lives in Oslo.

This study concerns the behavior of immigrants and descendants in the "domestic marriage market" of Norway. Thus, I exclude all *immigrants married abroad*, all immigrants *imported by a Norwegian spouse*, and no majority Norwegians are included in the analyses except as a characteristic of their spouse in the immigrant population. All research questions are investigated separately for the whole immigrant population, and for a subset of the national-origin groups selected because they consist of a significant number of both immigrants and descendants: Morocco, Turkey, India, Pakistan and Vietnam. For the intermarriage analyses, Denmark is included to achieve a sense of perspective – but a similar move was not pertinent

in the import analyses because of the required number of observations to run logistic regressions. The remainder of this introduction puts the research questions in scientific and societal context, before outlining the structure of the thesis.

1.2 Relevance and context

1.2.1 Scientific rationale: new knowledge about an old topic

The process of matching and mating is a crucial part of human society. In fact, the latter fundamentally depends on it. Studying partner choices, it could be argued, is inherently interesting because most people engage in courtship or enter a marital union (or several) during a life-course. The act of entering a marriage, it could be argued, is among the most important of all *social actions*. Social actions are often conceived to constitute the subject-matter of sociology, by an influential definition (Weber 1962). Hence, studying the conditions of this particular type of choice is attractive from a social scientific perspective. However, social scientists are also interested in spouse selection because it can be interpreted as an *indicator* of larger social processes (Kalmijn and Van Tubergen 2010: 459). First, the degree of intermarriage between national-origin groups signals the amount of between-group tolerance in a society, as the intimacy between spouses points to an acceptance of each other as being on an equal footing (Fryer 2007). Second, such interaction involves not only the spouses, but their families, relatives, friends and wider networks – generating intergroup contact on a larger scale (Kalmijn and Van Tubergen 2010: 459). Third, it also indicates the future of prejudice, as the children of exogamous unions are unlikely to identify with only one group (Xie and Goyette 1997).

A common way to validate a project is to stress its unprecedented contribution. Apart from a few reports of descriptive statistics produced by Statistics Norway (Lie 2004; Daugstad 2008 & 2009; Henriksen 2010)[4], there is presently little research on my selected topic within the Norwegian context. In a sense, it is therefore meaningful to call this study exploratory. Through fleshing out social mechanisms which might explain the observed spouse choices,

[4] Although Daugstad (2009) investigates the importance of education and parents' socioeconomic status, her analyses are limited to bivariate comparisons in tables, with no tests of significance and low numbers in most decompositions. In several instances, she recommends further register-based analyses.

and modeling the statistical influence of several characteristics, I intend to demonstrate that the sociological perspective is different from psychological and economic alternatives (cf. Kalmijn 1998: 398). As I am directly inspired by similar research conducted in other countries (e.g. Dribe and Lundh 2008; Kalmijn and Van Tubergen 2007, 2010; Van Tubergen and Maas 2007; Kulczycki and Lobo 2002), I hope to insert a few pieces of a larger theoretical and empirical puzzle.

1.2.2 Societal rationale: integration and group boundaries

Although social research can be corroborated by the progress of human knowledge itself, most non-scientists (i.e. most citizens) confront research efforts with the legitimate question "what is the use of this information"? While this pragmatic query of science can occasionally be validly rejected, as "human interest and scientific relevance do not invariably coincide" (Merton 1964: 128), this is not the case here.

First, the tendency that certain particularly visible national-origin groups display very little intermarriage with the majority is often cited as a sign of failed integration. Indeed, the link between intermarriage and integration constitutes a widespread assumption among both laymen and researchers (Huntington 2004: 37; Song 2009; Lucassen and Laarman 2009: 54; Bean and Stevens 3002: 109). A classical sociological perspective suggests that the isolation of groups in the same society over time constitutes "social closure" (Weber 1978: 43). Accordingly, endogamous patterns may be considered a measure of a particular type of social closure: the degree to which immigrant or minority ethnic groups are integrated in society. High levels of endogamy indicate a lack of intimate relations between national-origin groups almost by definition (Birkelund & Heldal 2003: 2). Correspondingly, high levels of exogamy may indicate frequent social interactions and strong social acceptance between groups (Kalmijn 1998). This is reinforced by the fact that a marital union connects not only the two spouses, but also the families and networks to which they belong (Kalmijn and Tubergen 2010: 459).

However, how one conceives of the relationship between intermarriage and integration depends on how on understands integration (Song 2009). In a re-conceptualization of the distinction between natives and 'foreign' residents of a society by the invocation of boundary processes, Richard Alba (2005: 21) suggests that 'parity of life chances' between these

groups constitutes *assimilation*. Noting that others might prefer to call this integration, he argues that immigrant groups are more likely to attain this parity with the majority if they change their "ethnic, cultural or communal attachments" (Alba 2005: 43) – and thus that the notion of assimilation suits the definition better. Commenting on Alba's (neo-)assimilation theory, Bean and Stevens (2003: 94) elaborate on this understanding as one that emphasizes a *convergence* between majority and minority, and not clean cut absorption of the newcomers in the dominant's society. Although I am sympathetic to attempts at reviving the notion of assimilation, I choose the conventional concept of integration as it is largely used in Norway, which involves emphasis on the free choice of immigrants of whether to adapt culturally to the majority or not (Brochmann and Kjelstadli 2008: 18).

If socioeconomic parity is a measure of successful integration, how does spouse selection relate to this? Some have suggested a link between intermarriage and economic assimilation, largely based on the idea of "human capital spillover" from the majority spouse to the minority spouse (Dribe and Lundh 2008: 333). In Norway, Østby (2004: 77) displays higher levels of employment and higher wages for immigrants with spouse from the majority population than those married endogamously. He also finds that immigrants married exogamously to another immigrant have higher average wages than endogamous couples (Østby 2004: 73). However, throughout Europe there are several national-origin groups displaying low rates of intermarriage and high rates of labor market integration (Lucassen and Laarman 2009: 54). Depending on one's conception of integration, one can also think of *inmarriage* as socially desirable: it promotes the integration of the ethnic group, underlining its boundaries and protecting its cultural legacy from the melting pot. In this sense, thus, the selection of a spouse from one's own group – whether from the homeland or country of residence – contributes to the tight-knit feature of ethnic groups.

Second, there are the cross-generational consequences of inmarriage. As suggested above, marital patterns may have decisive consequences for the demographic development of human societies. In the case of my theme, the social and genetic components of this process are intertwined. Marriages often carry the potential of offspring. As mentioned above, one does not need to be well-versed in biology to understand that assortative mating influences the genetic composition of society's toddlers. However, the social and cultural features of mixing and the lack of it are more prominent in the debate. On the one hand, children of endogamous unions are likely to identify with their parents' common cultural heritage, and

thus may consider themselves as "foreigners" or "immigrants" notwithstanding their Norwegian birth-certificate and citizenship (Øia and Vestel 2007). On the other hand, children of mixed marriages tend to have less negative attitudes towards other groups (Tubergen & Maas 2007: 1066), and less rigid ethnic identification (Kulczycki and Lobo 2002: 209). Thus, intermarriage will most likely contribute to the "blurring" of group boundaries (Alba 2005).

Third, the more endogamous immigrant groups are, the more attention is directed towards their unfamiliar marital practices. Throughout the last decades in Norway, there has been considerable focus on the cultural practice of parent-arranged marriages (frequently confused/conflated with forced marriages), and its disparate impact on women and men (Bredal 2005). Also, medical researchers have voiced concerns for disproportionate rates of consanguineous marriages, involving higher risks of health problems for their offspring (Surén et al. 2007).[5] The phenomenon of spouse import is another example of criticised marital practices, and received increasing attention during the 1990s, when politicians and public became aware of the unprecedented growth in the immigrant population not only through family reunification but also through "fresh spouses" (Brochmann and Kjelstadli 2008: 207). Regarding the issue of integration, choosing to import a spouse has the added feature that Norway receives another foreign adult, often with relatively low chances of adapting to "our" culture and economy. Also, this phenomenon is possibly an even more group-isolating choice than "domestic endogamy" – as the group's particularity is "fueled" by input from the country of origin (Gonzalez-Ferrer 2006: 172). Indeed, there is a widespread worry in Norway that imported spouses are less likely to learn the language properly, interact with people from the majority population, and thus that they will not be able to teach their children the language and ways of the society in which they live (Lie 2004: 100). [6]

[5] As of 2005, Norwegian statistics show the rate of children born from consanguineous mating between cousins to be particularly widespread among immigrants of Pakistani (43,9%), Moroccan (17,3%) and Turkish (17,1%) background. Descendants of Pakistani and Turkish national-origin display lower, but still alarmingly high rates (respectively 35,1%/11,7% , while for children of Moroccan immigrants the rate has diminished significantly, to 3% (Suren et al 2007: 4).

6 The latest widely publicized voicing of these concerns came at a debate between right-wing populist Christian Tybring-Gjedde (FrP) and foreign minister Jonas Gahr Støre (Ap), in which the former pressed the issue that unlike Norwegian immigrants to the US a century ago, "our" immigrants do not marry with the majority, but display "uncultural" actions such as spouse import, arranged marriage and forced marriage (National Broadcasting Corporation 2010).

A crucial qualification of scientific practice is in my view the effort of value-free reasoning. Thus, this thesis simply assumes the role of providing knowledge about the statistical patterns and influences of spouse selection, so that future debates and political decisions touching upon this subject is better informed empirically. [7]

1.3 Limitations

An overarching scientific goal of this study is obviously to learn more about why immigrants and descendants choose spouses of their own or different national background. However, there are several caveats concerning the impact of this study on our understanding of these dynamics in general.

First, the register data available to me do not contain any information on the partners of those registered as cohabiters. While it remains true that "marriage is undoubtedly the most profound and lasting human relation of all those established (in modern society)" (Blau et al. 1984: 591), unmarried cohabitation has become a form of union formation very similar to marriage both legally (Noack 2001: 115) in numbers (there are currently about 600,000 cohabiters in Norway) and demographic quality (the mean duration of such unions is increasing, and Norway displays a very high proportion of births – about half – to cohabiting couples) (Wiik 2010: 8, 33). However, only 3% of immigrants from Asia and 4% of immigrants from Africa were cohabiting in 2001 (Lie 2004: 28). A total of 4% of all immigrants were shown to be cohabiting in a survey from 2005-2006 (Blom 2008: 47). Still, there is undoubtedly variation between both individuals and national-origin groups with respect to their cohabitation rates, and thus the possibility that cohabiters may display different spouse selection patterns (Trilla et al. 2008; Kalmijn and van Tubergen 2010) introduces this admonition to my conclusions.

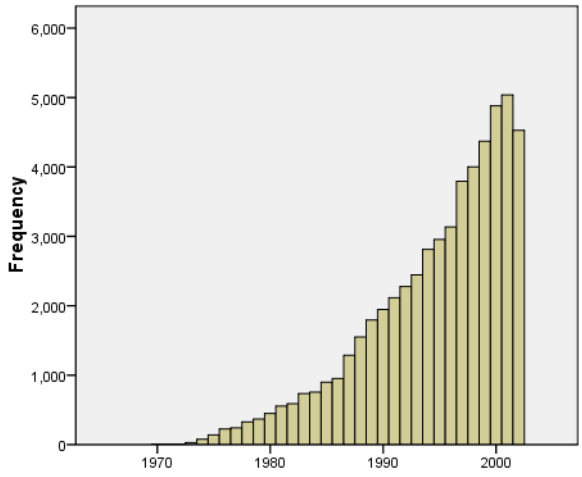
Second, there is the issue of unobserved heterogeneity, or omitted variable bias. Although there are many other properties hypothesized to co-vary with endogamous and exogamous partner choices, most of these are either unfeasible to test with my empirical material – or

[7] Expanding this statement, I acknowledge that there is no "view from nowhere". Still, I subscribe to the observation that the open exchange of arguments and evidence idealized in the scientific community is a forceful barrier against scientific conclusions being drawn on purely "subjective" and value-specific grounds.

fall outside the scope of a master thesis. Because of the former restriction, "subjective" matters such as religion, language skills, cultural distance and phenotype appearance are not directly accounted for in the analyses. Because of the latter restriction, I also choose not to take account of group level determinants (Heaton and Jacobson 2000; Blau et al. 1984). These factors, which include both structural (group demographics such as sex ratio and size) and cultural (marriage customs, ethnic diversity, dominant religion) types, have recently been shown to influence spouse selection patterns significantly (Kalmijn and van Tubergen 2010). In this thesis, they may have a confounding impact on the accuracy of estimates.

Third, a few words must be said about the limitations connected to *time*. The most conspicuous caution is the fact that my data are relatively outdated, as the latest registration of marriages is the last day of 2002 (December 31st). Among the most important change to note is the growth of certain descendant groups pertinent to include in these analyses. Daugstad (2009: 3) argues that the children of immigrants involved in an established relationship are non-representative for the descendant population as a whole; they have married early, display lower rates of education and their parents score lower on socioeconomic status.

Figure 1.1 Year of marriage



This study utilizes so-called stock data, compiling all marriages during a period to analyze their characteristics. As such, it assumes (rather unrealistically) that the importance of independent variables is constant throughout the period (1973-2002). Figure 1.1 displays the

distribution of the entire population of immigrants and descendants analyzed in this thesis (*N*= 55293), and illustrates that the majority of individuals included in my analyses have married during the last two decades (more specifically: 25% have married in 2000 or later, 50% have married in 1997 or later, while 75% have married in 1992 or later).

A problem related to this is the validity of intermarriage rates as measure of inter-group integration, if the continuity of such unions is left unchecked. Because exogamous unions have been shown to be less stable than endogamous unions (Lie 2004: 91; Kalmijn et al. 2005), these stock data could misrepresent the degree to which inter-group relations actually prevail in the marriage market. However, this signals both that more exogamous couples marrying within the last decades are not included in my analyses – and that more exogamous unions than endogamous unions among those analyzed here will be divorced in a decade.

Finally, two caveats related to the spatial limitations of a master's thesis. The first is connected to my helplessness in discussing the overall variation between national-origin groups in spouse selection patterns. As suggested in the last chapter, *accounting* for this variation may be approached, but through a slightly different design (including more variables on group level etc.). This thesis does concern these differences, but focuses more specifically on the role played by particular factors in addition to specifics of national-origin groups. Second, I estimate the chances of minority exogamy, i.e. choosing a spouse from another national-origin group in the immigrant population of Norway. However, although its variation between national-origin groups is large, this outcome is not discussed – and largely commented upon only in the cases in which its independent variable estimates deviate from that seen for majority exogamy.

1.4 Definitions

To many outsiders, sociologists often appear to be toying with words more than actually finding out stuff. Indeed, as argued by Lyngstad (2009), there seems to be a widespread conviction within the discipline that new words themselves contribute to an explanation of something. Still, it is appropriate to clarify the intended meaning of frequently used words.

Unfortunately, the public debate on integration and immigration is a conceptual ordeal. Although unable to avoid the fact that most notions are muted by discussions both in media

and academia, I have opted for simplicity rather than elaboration in this arena. There are immigrants (people who have actually immigrated), descendants (children of two immigrant parents), and both groups are part of *the immigrant population*. Further, I occasionally utilize the shorthand of "non-western" versus "western", mainly because the novel substitutions provided by Statistics Norway are too long, and the alternative shorts "Regional-group 1 or 2" is devoid of meaning to most readers.[8] When talking about the population with Norwegian ancestors, I use the notions of "majority Norwegian" or simply "the majority population" – the members of which are different from minority groups (i.e. immigrants and descendants) simply in that they are demographically the overwhelmingly dominant national-origin group in Norway. Talk of the differences between men and women is no less a minefield. Although the notion of gender is more widespread among sociologists, in this thesis I interchangeably use the words "sex" and "gender" when referring to the differences between men and women.

An influential definition of exogamy is that the spouses come from different groups "which are culturally conceived as relevant to the choice of a spouse" (Merton 1964: 130). A human being often belongs to many groups. When I use the notions of endogamy (intermarriage) and exogamy (inmarriage) in this thesis, reference is made not to the "culturally relevant" background forwarded by Merton, but simply to whether the spouses share national origin or not.[9] In media and colloquial terminology, differences between national-origin groups are often conflated with *ethnic* dissimilarity. Here, notions of interethnic unions, ethnic intermarriage, and other references to race and ethnicity widespread in anglophone social science have been avoided – except for a few passages in Chapter 3 where these notions display the logic of certain mechanisms. Following Daugstad (2008: 8) my notion of spouse import includes all cases where a Norwegian resident (of immigrant background) marries a non-resident, or marries a newcomer within the year of migration.

[8] However, adhering to the fact that these notions are imprecise remnants of the past, with undesirable normative connotations (Fangen and Mohn 2010: 145), I insert them in quotation marks.

[9] Some of the marriages I label endogamous *may* thus be exogamous according to ethnicity (as some national backgrounds conceal many ethnic groups), as well as other social dimensions (Merton 1964: 130).

1.5 Structure

The thesis is structured in eight chapters, three of which presents empirical results of the statistical analyses. Following a common research strategy, the next step of this thesis is to establish what knowledge previous investigations have produced. Chapter 2 thus provides a concise account of empirical research on the spouse selection of immigrant groups and ethnic minorities.

All research is governed by a philosophy of science, i.e. ideas about the logic of science, valid explanations, the role of theory and the relationship between science and the reality it is supposed to depict (Holst 2009). Following the train of thought labeled *analytical sociology* (Hedström 2005), theories are tools of empirical research, meant to single out the mechanisms responsible for generating the patterns observed. In addition to suggesting a cluster of mechanisms, Chapter 3 presents their empirical expectations.

A key principle of all sciences is that every step in the process of discovery is transparent and accessible to those seeking to review its validity and reliability. This study relies on quantitative data, and utilizes regression techniques to process this information. Although all calculations are performed by the *SPSS* and *Excel* software, Chapter 4 describes the register-based dataset, how variables are operationalized, and the logic and application of two types of logistic regression models (bi- and multinomial).

Chapter 5 first presents bivariate contingency tables of national-origin and spouse selection outcome for two response variables. The first (A) measures the degree of intermarriage as three outcomes: endogamy (in-group marriage), exogamy (intermarriage) with majority and exogamy with other minority. The second response variable (B) measures whether the endogamous have imported their spouse or not, as a dichotomous outcome.

Results of the multivariate analyses are reported in two chapters, providing tests of how national origin, educational level, generation, gender, residence, age at marriage and length of stay influences spouse selection. Chapter 6 reports the results of multinomial logistic regressions of the impact of these regressors on intermarriage outcomes. Then, Chapter 7 reports binomial logistic models analyzing the impact of the same regressors on the spouse import probability of the endogamous. Both chapters include models comprising all

independent variables, as well as separate analyses ran for men, women, descendants and immigrants.

Finally, chapter eight provides a discussion of the results in the light of the theoretical mechanisms and hypotheses forwarded, and an attempt at pointing the way forward for further research in this field.

2. Previous research

This chapter presents relevant research conducted on the spouse selection of immigrant groups (and to some extent ethnic and racial minorities in the US). Its rationale is not only showing what I relied on when developing this study, but developing an argument as to where my own contribution fits in. While the Norwegian research is currently limited to documentation of spouse selection patterns among the immigrant population,[10] many non-Norwegian studies aim specifically to analyze the factors influencing spouse choice.

2.1 Norwegian patterns

Statistics Norway is an invaluable source of reliable, extensive and accessible quantitative knowledge about the population residing in Norway. My subject is not an exception: through several reports during the last decade, the spouse selection of immigrants and descendants has been mapped.

[10] Having said this, the existence of sociological studies of other types of assortative marriage (especially educational homogamy and class endogamy) in Norway must be noted (Hansen 1995; Hansen 2002; Birkelund and Heldal 2003; Birkelund and Goodman 1997; Wiik 2009).

2.1.1 The immigrant population

In an extensive register-based report, Lie (2004) depicted the stock of marriages involving at minimum one person from the immigrant population in 2002.[11] Among married men in the "western" immigrant population, 72% have a majority Norwegian spouse, 19% have a spouse from their own region of origin, and 5% have engaged in transregional unions (i.e. roughly equivalent to what I call minority exogamy in this thesis). Among married men from "non-western" countries, 13% are married to a majority Norwegian woman, 70% have spouses from the same region and 2.5% are married transregionally (Lie 2004: 43). When it comes to the female immigrant population, those of "western" background marry with the majority population at 78%, while the corresponding figure for "non-western" women is 28% – a great deal more than men of the same origin (Lie 2004: 44).

Table 2.1. Marriage by the national-origin group of spouse, female residents (male national-origin in italic). Count. 1.1.2002

	Sum	Norway	Nordic Countries	Western Europe	Eastern Europe	Africa	Asia w/ Turkey	Northern America	S- and C-America	Oceania	Missing
Sum	843 929	780 769	9 439	8 782	9 062	4 765	22 564	2 153	1 788	261	4 346
Norway	772 590	749 314	6 960	6 676	1 616	1 388	2 215	1 757	754	210	1 700
Nordic Countries	12 214	9 582	2 049	172	55	48	77	47	20	5	159
Western Europe	7 959	5 898	107	1 538	57	53	126	50	27	9	94
Eastern Europe	12 912	4 827	94	116	7 261	35	179	17	20	1	362
Africa	5 058	740	20	52	4	3 146	96	4	5	0	991
Asia w/ Turkey	27 681	6 486	131	132	48	78	19 831	18	7	6	944
Northern America	2 524	2 133	34	43	8	7	13	247	7	3	29
S- and C-America	2 747	1 601	36	44	11	10	24	8	948	0	65
Oceania	244	188	8	9	2	0	3	5	0	27	2

Adapted from Lie (2004: 44)

On the whole, the stock of marriages in Norway as of 01.01. 2002 displays large differences between groups and sexes. While men with Scandinavian background marry majority

[11] There are two pivotal differences between these data and those used in this thesis. First, the prevalence data used by Lie are updated 1.1.2002, meaning that one year of marriages divide this empirical material from mine. As shown by Figure 1.1, around 4500 marriages took place during 2002, possibly encompassing around 10% of the marriages analyzed here. Second, and most importantly, Lie's analyses encompasses immigrants married abroad (Lie 2004: 53), and hence the estimates of endogamy and exogamy are heavily biased by the variance between groups as to whether a large proportion migrated as couples or not.

Norwegian women at a 75% rate, the following country backgrounds display very low intermarriage rates with female natives: Afghanistan (1%), Somalia, Vietnam, Bosnia-Herzegovina, Iraq, Pakistan (3%), Sri Lanka, Ethiopia and China (9%). Although no statistical control for this was provided, Lie speculates that for some of these groups a recent arrival to Norway impacts on these rates (Lie 2004: 47).[12] Some groups of men have high rates of intermarriage with other non-Norwegians (Croatia 19%, Ethiopia 23%, France 13%) – but these are often from neighboring countries or other parts of the same, historically disintegrated country (e.g. Yugoslavia). In sum, "non-western" groups of men with recent arrival are most endogamous.

Table 2.2. Marriage by the national-origin group of spouse, male residents (female national-origin in italic). Count. 1.1.2002

	Sum	Norway	Nordic Countries	Western Europe	Eastern Europe	Africa	Asia w/ Turkey	Northern America	S- and C-America	Oceania	Missing
Sum	847 933	770 096	12 185	7 990	12 460	4 129	26 803	2 580	2 731	251	8 768
Norway	781 958	748 868	9 652	5 968	4 759	748	6 461	2 210	1616	196	1 480
Nordic Countries	9 732	6 910	2 085	110	94	20	131	35	36	8	303
Western Europe	9 114	6 505	183	1 579	115	50	132	46	44	9	451
Eastern Europe	9 566	1 609	58	58	7 241	4	50	9	11	2	524
Africa	6 482	1 369	50	55	35	3 203	76	6	9	0	1 679
Asia w/ Turkey	26 799	2 193	84	130	177	95	19 924	13	25	3	4 155
Northern America	2 128	1 695	49	50	18	4	17	252	7	5	31
S- and C-America	1 956	743	19	30	20	5	7	6	982	0	144
Oceania	258	204	5	10	1	0	5	3	1	28	1

Adapted from Lie (2004: 42)

Some groups of non-western women have very high rates of intermarriage with Norwegian men (Thailand 93%, Russia 79%). In most of these cases, the marriage itself is the reason for migration. In the other end, the most endogamous groups of women are those from Iraq (0% intermarriage) Pakistan (1%), Somali, Bosnia-Herzegovina, Sri Lanka, Turkey (4%), Iran, Vietnam, Ethiopia and Morocco (9%) (Lie 2004: 49). The picture of transnational unions excluding Norwegians is similar to that depicted of men above.

[12] Because of the recent arrival of some groups, there are significant rates of missing information on spouses for some groups (especially Somalis, Iraqis and Afghans). As described in chapter 4, my analyses are run without those missing

The most vivid example of endogamy is the Pakistani rate, especially because this national-origin group is relatively old compared to the rest of the immigrant population. The absolute number of Pakistani men married to Norwegian women dropped from 1990 to 2002, while there are hardly any (35 individuals, 0.7%) Pakistani women married to Norwegian men as of 2002 (Lie 2004: 55). One reason is probably the large degree of family reunions and spouse import, excluding them from the domestic marriage market.

Based on Statistics Norway's survey LKI ("Living conditions among immigrants") from 2006, a more probing analysis shows that those with higher education are more likely to intermarry with a majority Norwegian among Turkish, Pakistani and Vietnamese immigrants (Daugstad 2009: 29). As described below, a similar pattern appears to be at work for descendants of immigrants. However, the low count of these surveys points to a need for register-based analyses.

2.1.2 Non-western descendants

The social performance of immigrants' *descendants* is often conceived to be the real litmus test of integration. Whether they reach the average educational and occupational levels of their majority Norwegian peers is of crucial interest to social scientists and policy makers (Birkelund and Mastekaasa 2009: 11). There is also anticipation as to whether they will display a pattern of spouse selection different from that of their immigrant parents.

Following this rationale, Daugstad (2009) portrays the partner choices of immigrants' children, based on a survey ("LKI-U") sampling 870 (only 126 of which are married or cohabitating) Pakistani, Turkish and Vietnamese descendants and early immigrants (migrated under the age of 6) aged 16-25.[13] Roughly, Daugstad's results match the patterns of the immigrant population at large. Men are much more exogamous than women (about 1/3 vs. 1/5) in general. Those of Pakistani origins are most endogamous, at a 7% rate. Turkish

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information on time of marriage, as these are very likely to be married abroad.

[13] Resulting numbers are small, especially in decompositions, and there are no tests of significance provided in the analysis. Scientifically, it is unfortunate that this group counts few reaching adulthood – making it difficult to perform reliable statistical analyses. Regrettably, this is exacerbated by Daugstad's use of survey data (see the last segment of this chapter).

descendants follow closely at 11%, but the Vietnamese descendants are unusually exogamous at 60%. The cross-tabulations show that there is less education among the married/cohabiting, and that there is more intermarriage among those with higher education (as seen above for immigrants). Among women in particular, there is less activity (labor and education) among those married or cohabiting, vs. the singles. The survey data allow Daugstad to investigate the importance of "informal" aspects for partner choice. In this survey, those reporting to have majority Norwegian friends are more exogamous than those lacking such contacts (Daugstad 2009: 35). She also finds that those reporting religion as a highly important factor in their lives more frequently agree with the claim that one should marry endogamously – and this effect is strongest for Pakistani descendants, whose degree of religiosity is also the highest (Daugstad 2009: 51). Unsurprisingly, the survey also showed that those reporting positive attitudes towards interethnic intimacy are more likely to be exogamous.

2.1.3 Spouse import

As seen in the introduction, spouse import is often considered a motor and indicator of failed incorporation processes. Daugstad (2008) depicts spouse import (defined as all marriages including a Norwegian resident and a non-resident [Daugstad 2008: 8]) in the period of 1990 to 2007. Although the majority of such transnational unions are engaged in by ethnic Norwegians (mainly men marrying women from Thailand, Brazil, Russia and the Philippines) (Henriksen 2010: 9; Daugstad 2008: 82), the share of such unions among marriages is larger among immigrants and descendants. Among immigrants, the gender differences are significant: while 30% of nonwestern female immigrants marry transnationally, 61% of their male peers do so (Daugstad 2008: 51). Among "non-western" descendants, the pattern is less gendered: in 2007, 54% of female marriages and 57% of male marriages were transnational unions. Daugstad reports that there are great differences between immigrant groups. Around 75% of both male and female Pakistani and Turkish immigrants married transnationally, and 67% of Indian and Moroccan men found a spouse transnationally. On the other hand, the predominantly refugee group of Vietnamese immigrants displayed a 60% rate for men and 31% for women, while Chileans (50/40%), Serbs (64/51%) Iraqis (64/51%) and Iranians (60/37%) also had relatively low rates (Daugstad 2008: 53).

In general, most groups of descendants seem to be following the pattern displayed by their parents. In the period 2002-2007, shares of transnational marriages for different descendant groups were: Pakistani (70/70%), Turkish (63/68%), Moroccan (55/56%), Indian (67/46%) and Vietnamese (50/20%). However, in the time-span of 1990-2008 very few of those imported establish relations with residents below 23 years, and less than 100 yearly are imported to marriage with someone below 21 years (Henriksen, 2010: 20). Although Pakistani spouses are disproportionately imported by younger residents (of Pakistani background), the numbers have dropped during the latest decade. The same holds for Turkish descendants and immigrants. The main reason for this seems to be that these groups increasingly postpone the decision to get married (Henriksen, 2010: 26).

2.2 Partner choice "determinants"

Close to the end of the last century, Kalmijn (1998) summed up the state of research on intermarriage – and concluded that although an important job had been done in describing marriage patterns, future research should focus more on their *explanation*. In accordance with this, all the works presented in the following are attempts at closing in on explanations of partner choice.

Quantitative sociology flourished in postwar USA. Modeling different aspects of society through multivariate statistical data analysis became possible through the advent of high-speed computers, pioneered by ingenious sociologists such as Peter Blau, James Coleman, Otis Duncan and Paul Lazarsfeld (Sørensen 1998: 240-42). The bulk of empirical research on intermarriage patterns both in Europe and the US stems from the tradition generated in this era. Largely because of this, the dominant conception of explanation in this field is evaluating the statistical strength of intermarriage "determinants".

2.2.1 Structures and opportunities

Throughout all types of more or less intimate relationships, we are more likely to interact with people who are close to us in geographic space (McPherson et al. 2001: 429). Blau and his colleagues (Blau, Blum and Schwartz 1982; Blau, Beeker and Fitzpatrick 1984) were interested in so-called opportunity structure influences on intermarriage propensities. They

tested intermarriage according to several dimensions: race, national origins, mother tongue, ethnicity, birth region, occupation etc. In one article (Blau, Blum and Schwartz 1982: 46) it was shown that group size is negatively (inversely) related to outmarriage, while heterogeneity is positively related to outmarriage. The logic is straightforward: a relatively large group increases the chances of mating with someone from this group – and great variation according to other social characteristics generates possibilities of mating homogamously with someone from outside the group, according to another characteristic. In another article (Blau, Beeker and Fitzpatrick 1984), it was proposed that the degree of overlap between social characteristics is negatively related to the degree of intermarriage.

A benefit of Blau's work was the ability to explain exogamous partner choices on the basis of a sociological theory, without speculating about people's preferences. Some American researchers have focused distinctively on the opportunity structure aspect of partner choice. Jacobson and Heaton (2000) perform tests of the influence of military service, college attendance, metropolitan residence and geographic region of residence. Their results display the necessity of contextualizing group differences. While college attendance promotes exogamy for blacks and Hispanics, it is negatively related to exogamy for white females. Metropolitan residence promotes general exogamy for whites, and increases chances of intermarriage to other minorities for blacks and Hispanics. Living in the Southern region is a barrier to exogamy for blacks and Hispanics, while living in the Pacific region is a barrier to exogamy for Asians. These regions have population distributions which enhance the opportunity of the respective groups to find a partner inside their own group. The only univocal effect is that of military service: it promotes exogamy for all groups.

In a similar vein, Okamoto (2007) aims to understand the role of structural conditions in unions involving at least one partner from the largest Asian groups in the US: Indians, Chinese, Filipino, Japanese, Korean and Vietnamese.[14] For the analyses of intermarriage-influencing factors, she argues that not only does structural and demographic factors influence the opportunity of meeting and mating – but they also cultivate different environments for group solidarity and identity formation (Okamoto 2007: 1397). Her results

[14] Okamoto's regressions are estimated with 'robust standard errors' to deal with clustering/autocorrelation (because variables are measured both at individual and metropolitan area levels). This can be interpreted as an alternative to using multilevel modeling techniques.

show that all group level predictions are supported according to a group's relative size, sex ratio, heterogeneity, residential and occupational segregation and status inequality (overlap between racial and socioeconomic groupings)(Okamoto 2007: 1409).

2.2.2 Individuals and assimilation

Many US analyses of partner choice have focused exclusively on one or a few major ethnic or racial groups. Several of these studies emphasize partner choice as indicating the degree of cultural assimilation achieved (see the European section below). Illustrative of this is Kulczycki and Lobo's (2002) study of intermarriage among Arab Americans. Apart from displaying astonishingly high exogamy rates for the Arab American population (79% of males and 73% of females), their results show that being part Arab, native born, proficient in English, a man, having higher education and being Lebanese all increase the chances of being exogamous.[15] While skewed sex ratio increases the intermarriage rates for men (because there are much fewer women than men), the acculturation variables (hybridity, birth place and language skills) are more important predictors for women (Kulczycki and Lobo 2002: 209).

Assimilation perspectives are frequently concerned with the effect of generational differences. A sophisticated study from Israel (Gshur and Okun 2003) singles out the independent effect of generational belonging in patterns of endogamy and exogamy. Controlling for generational endogamy, this analysis shows that increased exogamy over time is not a result of changes in the generational composition of immigrant groups (more 2nd generation, more exogamy) – but an actual increase in the ethnic exogamy among native-born Israelis with immigrant ancestors. In an exploratory analysis of cohabitation and intermarriage rates among the foreign-born in Spain, Trilla, Esteve and Domingo (2008) show that increased duration of stay and decreased age at arrival are both positively correlated to higher probability of intermarriage (Trilla et al. 2008: 881). According to the authors, there is also evidence of status exchange in their analyses – in that individuals with higher level education have high levels of intermixing with Spanish citizens. However,

[15] Unfortunately, census data does not contain information on religion, which the authors stress would be an interesting variable to include in these analyses (because a large bulk of this population consists of Christians from Lebanon and Syria, and there are reasons to believe that their Muslim counterparts behave differently in the multicultural marriage market).

significant differences between country groups do not disappear when controlling for these variables (Trilla et al. 2008: 898). Their conclusion is that contextual/structural elements should be included in such multivariate analyses, as they seem to play a significant role in influencing patterns of partner choice.

2.2.3 Incorporating individuals and structures

In an early study of both individual and structural determinants of partner choice, Hwang et al. (1997) provided the first US-wide assessment of the intermarriage of Asian Americans (Hwang et al. 1997: 767). Apart from displaying the unique tendency of Asian women to marry out more than their male counterparts, this analysis confirmed the role of several individual and structural factors. It was found that high levels on "acculturation" (immigrant status, language proficiency) variables correlate with high levels of exogamy. Also, most of the structural variables included (group size, sex ratio, internal diversity and residential segregation) included have a significant and expected effect. However, level of education was unexpectedly found to be negatively correlated with exogamy. The proposed explanation for this is that Asian Americans with low levels of education are undesired as partners within their own group, and thus forced to seek out – while highly educated Asian Americans are in addition more conscious of their ethnic group membership.

The design advocated by Hwang and his colleagues has been put to use in several recent European studies. Based on 5 surveys which over-sampled the minority population in the Netherlands from 1988 to 2002, Kalmijn and Van Tubergen (2006) seek to assess whether findings of determinants in the US and elsewhere are transferable to the Netherlands. The results are largely in accordance with previously accumulated knowledge. Having been born in the country, or migrated at a low age, increases the chances of exogamy. Similarly does higher education and being cohabiter, a skewed sex ratio and a large share of second generation immigrants in ones ethnic population. Contrary to expectations, Kalmijn and Van Tubergen do not find significant gender differences, they do not detect a relative group size effect and their hypothesis on race is completely off the mark: the two groups counted as "black" (Antilleans and Surinamese) are much more exogamous than Turks and Moroccans. This seemingly points to culture as being more important than skin color in the European context.

A study done in the same vein is that of Van Tubergen and Maas (2007: 1072).[16] The results of their analyses are mostly in line with expectations. Among the context variables, small relative group size, skewed sex ratio, residential integration and religious heterogeneity are all affiliated with increased chance of exogamy. Of individual level determinants, being non-religious, coming from a group in which Dutch language is commonly known, being "white", having high levels of education and being a man are all positively related to being exogamous.

In a geographically and empirically proximate study[17], Dribe and Lundh (2008) explore the effects of certain determinants of intermarriage in Sweden. The results of their regression analyses show expected variation between national groups, controlled for various other factors. This variation corroborates segmented assimilation theory. Of the tested determinants, length of adaptation, age at migration and education (except for Asian women) are all positively related to intermarriage. Residential segregation and living in metropolitan areas both decrease exogamy with Swedish-born, but the latter increases chances of intermarrying with someone from another immigrant group.

The Dutch duo Kalmijn and Van Tubergen (2010) were motivated by trying to apply theories of intermarriage to all groups.[18] Using data on 94 different immigrant groups in the US, exclusively 2nd generation and all those immigrated before the age of 16 (generation 1.5: a measure taken to exclude all immigrants married abroad) Kalmijn and Van Tubergen estimate multilevel[19] regressions showing that group-level variables explain appreciably

[16] Tubergen and Maas estimate four models, to separate effects of local vs. national marriage markets, the stock of those married outside current place of living, and time of marriage. The methodological lesson is twofold: timing of marriage and level of measuring contextual variables have virtually no effect. However, including immigrants married abroad (or outside current place of living) systematically leads to overestimating some effects while underestimating others (Tubergen and Maas 2007: 1082).

[17] Notwithstanding a sound empirical foundation of Swedish register data, Dribe and Lundh do not have information on generation among the immigrant respondents – hence, children of immigrants are counted as natives. This obviously misconstrues patterns of endogamy and exogamy, in that e.g. Iranian immigrants marrying Iranian descendants are calculated as exogamous couples.

[18] By the same logic, one would think that international data provide the strongest test of explanatory theories. Jacobson and Heaton (2008) pursue the structural determinants of partner choice cross-nationally. Based on Kalmijn's (1998) and Blau's (1988) theoretical work, they show that Xingjian (China) actually has 30 times more endogamous marriage patterns than New Zealand, the least endogamous of all national contexts examined (Jacobson and Heaton 2008: 143).

[19] Although many studies test both individual and contextual/structural determinants of intermarriage, few utilize multilevel modeling (Lievens 1998), which ensures that predictions of each variable are controlled for effects predicted by the other level factors. The results of Lievens (1998) confirm the importance of both levels of analysis.

more of the partner choice variation than individual-level variables. Among the former, "cultural" factors seem to be more important than "structural".

2.2.4 "Determinants" of spouse import

The last decade has seen a multiplication of "explanatory" studies on partner choice in the wake of Kalmijn's (1998) plea. However, few explanatory studies have concerned spouse import. A recent analysis of Germany (Gonzalez-Ferrer 2006) conveys that middle (early immigrants) and second generation are more likely to import spouses than actual immigrants, and even sex ratio lowers the chance of import. Unexpectedly, the chance of importing spouse increases with the size of ones community in Germany – and while male importers seem to be the least educated in their ethnic group, female importers are not. In Belgium, Lievens (1999) finds that higher age and education at marriage decreases the chances of spouse import for Turkish men – but surprisingly increases its chances among Turkish and Moroccan women. He suggests that spouse import may less of a "traditional" behavior than often supposed, and that it might serve more "modern" goals (such as achieving independence from one's in-laws) (Lievens 1999: 140).

2.3 The contribution of this study

My investigation is modeled in accordance to an international research field, which focuses on providing statistical correlations of intergroup spouse selection. Considering previous research both internationally and in Norway, what is the scientific contribution of this study? I suggest it lies in the combination of four key elements.

First, this thesis provides the first multivariate description of immigrant partner choices in Norway. As shown above, the extent to which individuals in the immigrant population of Norway have married within or outside of their national group has been mapped reliably. However, the co-variation of other social factors with the choice of spouse is largely unexplored.

Second, the extensive and reliable register data not only circumvent the problem of non-representative sample selection (Røed and Raaum 2003: 261), but the numerical volume of

these data makes it possible to analyze differences between national-origin groups (Daugstad 2009: 59).

Third, I map more spouse selection categories than most other international studies, with the inclusion of two dependent variables. Few studies have included "spouse import" as a category, and I consider this a comparable strength.

Finally, emphasizing theoretical mechanisms as my basic explanatory tool sets this study off from the international literature on intermarriage presented in this chapter. Admittedly, the regressions run in this thesis are equally subject to the criticism that coefficients of a statistical model quantify at best the effects of a mechanism (Manzo 2010: 143). [20] However, although the analyses provide estimates of "determinants" in the manner of earlier studies, the next chapter aims at a more fundamental understanding of the "nuts and bolts" (Elster 1989) of spouse import and endogamous/exogamous spouse selection.

[20] Many previous studies draw data from the stock of marriages, and utilize multinomial logistic regression. In this, my study is highly conventional – and "paradigmatic".

3. Theoretical mechanisms

It has been said that what sociologists call theory is often what philosophers would consider second-rate philosophy (Pawson 1989: 16). In this chapter I try to use theory as a tool for analyzing spouse selection patterns so that their causal features are better understood. The first section describes how the "analytical" approach to sociological theory is adapted to my research purposes. Then, I outline explanatory mechanisms for how the factors of national background, gender, education, generation, and age at marriage can influence endogamy, exogamy and spouse import. The empirical expectations of the sum of theoretical mechanisms discussed are presented at the end of the chapter, and specified in testable hypotheses.

3.1 Implementing analytical sociology

3.1.1 Social processes unpacked

The advent of contemporary analytical sociology was due to a widening gap between sociological theory and quantitative sociology. In an influential examination of the historical roots of this disengagement, Sørensen (1998: 241) argues that the high-speed computer is responsible for making quantitative sociologists "applied statisticians". One result of this technological revolution was an isolation of these researchers from those concerned with theories of social phenomena, making them develop a conception of theory as "sums of variables" (Sørensen 1998: 247). In essence, the shift from sociological to statistical models

and the conflation of theory with variables both contributed to an impoverished understanding of social processes (Sørensen 1998: 254).

Responding to this divide between empirical research and theoretical sociology, the programmatic aim of analytical sociology is to advocate *mechanism*-based explanations (Hedström and Swedberg 1998: 24).[21] Although more precise delineations of this concept have been suggested by analytical sociologists (see Hedström [2005: 25] for several proposals), I adopt Elster's (2007: 37) definition of mechanism as "a frequently occurring and easily recognizable causal pattern". In the social sciences, causal patterns are mediated by agents' desires and beliefs – the mental states causing their actions (Davidson 2001: 3). This involves a commitment to *methodological individualism*, the view that "a satisfactory explanation must ultimately be anchored in hypotheses about individual behavior" (Elster 2007: 36). The "weak" form of methodological individualism adopted here recognizes that norms and relations between individuals are actively influencing the social patterns to be explained (Manzo 2010: 141), and has also been called "structural individualism" (Hedström and Bearman 2009: 5). However, individuals' actions are always also influenced by something else than their desires and beliefs, namely their opportunities. Thus, a person's desires, beliefs and opportunities together *cause* this person's actions (Hedström 2005: 38).[22] This conception of agency is called the DBO-model.

Although sociologists are often concerned with the impact of societal phenomena such as culture, class or other structural and contextual aspects of social life – the DBO-model calls for recognition of the fact that these concepts can be unpacked into more concrete, agent-based occurrences. As such, mechanism-based explanations give specific content to Merton's idea of *middle-range theories* (Manzo 2010: 139). Analytical sociology provides "a *syntax of explanation*; that is to say, a set of constraints on how an explanation should be constructed and empirically tested." (Manzo 2010: 131, italic added). As foreshadowed in Chapter 2, the empirical analyses of this thesis are basically of the same kind as those

[21] For an account of the origins of contemporary analytical sociology, see Manzo (2010).

[22] When it comes to this view of the agent, Hedström (and others proponents, e.g. Skog [2005: 32] and Elster [2007]) relies on the philosopher Donald Davidson (2001), who clarified the relationship between reasons (composed of desires and beliefs) and causes. Against a widespread philosophical dogma at the time (1980), Davidson argued that reasons are causes, and that we mistakenly confuse them for two different phenomena because they belong to two different vocabularies: the mental and the physical (see Davidson [2001: ch.11] for a thorough discussion).

fundamentally criticized by analytical sociologists, because they enable only detection of statistical relationships between *variables*. However, although this thesis does not advance the testing part of Manzo's "syntax", on the conceptual level and in its suggestions of theoretical explanations it is fundamentally inspired by analytical sociology.

3.1.2 *Explanandum* and *explanans*

Previous research on endogamy and exogamy often subscribes to the "theory" that spouse selection is the product of three factors: the mate preferences involved, the (real and perceived) opportunities present and the impulses from third parties (Kalmijn 1998: 398).[23] In my view, this trichotomy of notions can hardly be called a *theory* (thus the quotation marks), as the claims involved are neither contentious nor specific enough to increase our understanding of spouse selection processes. This is partly due to the fact that the *explanandum* – i.e. the phenomenon to be explained – is defined too broadly. Explaining why some people select spouses endogamously and others exogamously is more suited to a research career than a thesis, and pretending to explain spouse selection in general (as the "theory" above pretends) is scientific hubris.

This thesis investigates whether national (or regional) background, gender, education, generation, and age at marriage influences the propensity of marrying endogamously or exogamously, or importing a spouse. Thus, the following part of this chapter proposes mechanisms for all these relationships. In this way, the *explanans* – i.e. the explanatory mechanisms – follows the independent variables in this study. The *explanandum* is constituted by the existence – or lack of – statistical correlations between these variables and the two spouse selection variables. In a manner akin to the hypothetico-deductive method, the theoretical explanations are presented prior to the empirical investigation in this thesis, and the final chapter evaluates the hypotheses generated from these – but each mechanism's validity in itself cannot be tested (i.e. falsified) here. It should be noted that while hypotheses are largely derived from the mechanisms suggested, they are occasionally also based on expectations from previous research.

[23] It should be noted that this conceptual triangle coheres well with Hedström's (2005) DBO-model, and is thus better understood as a model of agency underpinning most of the spouse selection research depicted in this thesis.

3.2 Mechanisms of intermarriage and spouse import

The presentation of spouse selection mechanics is divided into subsections organized around the independent variables of this study. Each mechanism proposed draws on Hedström's (2005) division between desire-mediated, belief-mediated and opportunity-mediated *interactions*, highlighting the principal logic of the mechanism. [24] Although the proximate cause of spouse selection often entangles all three of these (as suggested by the preferences/opportunities/third parties-trichotomy), the explanatory mechanisms suggested below are for the most part mediated by one of these basic composites of actions.

3.2.1 National (and regional) background

The Likeness-Breeds-Liking Mechanism

A proverb of European-American culture claims that birds of a feather flock together. This statement from folk social science can be restated less metaphorically as the mechanism that likeness leads to liking. Although the saying is contradicted by the equally widespread belief that "opposites attract", psychological experiments have confirmed the *likeness-leads-to-liking* effect across the spectrum of human relationships (Myers 2008: 399). People simply tend to prefer those who appear similar to themselves, and the desire for mates is no exception.[25]

The *desire-mediated* likeness-breeds-liking mechanism operates in several domains of human characteristics. However, some qualities are more important than others when people search for similarities in potential partners: "sociocultural" characteristics are more important than psychological traits (Epstein and Guttman 1984: 273). Research has exposed that similarity of values leads to mutual confirmation; similarity of taste enlarges opportunities to participate in joint activity; and similarity of knowledge enhances mutual understanding (Kalmijn 1998: 399). Although people with the same national origin do not necessarily share

[24] I thank Rannveig Vittersø Kaldager for consenting to this strongly inspired structure for presenting mechanisms. Fortuitously, the topics of our respective theses are different enough to make further plagiarism unlikely.

[25] What, then, about the idea that opposites attract? Counter to intuition and cultural tales, science has been unable to provide any support for this idea. Through a large set of hypothetically complementary qualities, spouses continue to display astonishing similarity. Thus, the hypothesis of a complementary mate pattern has been unequivocally rejected by psychologists (Myers 2008: 402).

ethnic group membership or even language, they often share both these and other traits. They often share moral values, sometimes because they identify with a religion predominant in their country of origin, sometimes simply because they have experienced similar cultural influences throughout their lives. They often share taste for food, music, literature and other cultural artifacts and practices. And they often have knowledge concerning their country's culture, society and history – a knowledge possessed by few others but their fellow group members in Norway.

Judging by the reasoning so far, there is thus substantial reason to expect endogamous patterns according to national background. And this hypothesis would probably be valid for all groups if nation states were isolated containers of people. This has never been the case. In our time, this is less the case than ever before. However, the tendency that some nation states are more similar than others in terms of the cultural traits discussed here, remains (Pedersen et al. 2006: 66). Thus, a significant variation between national origins in their propensity to marry majority Norwegians is expected.

The Dissimilarity-Breeds-Dislike Mechanism

Now, the fact that birds of a feather flock together informs us that spouse seeking individuals are most likely to search within the extended group of possible partners whose cultural background mirrors their own. However, the opposite mechanism is also at work: through the *dissimilarity-breeds-dislike* mechanism, people from different regions are prone not to like each other in so far as they perceive each other as having diverging attitudes, values and behavior (Myers 2008: 401). The following puts emphasis on the exclusionary effect of this mechanism for the integration of minority groups in national marriage markets. By this logic, I treat the Dissimilarity-Breeds-Dislike mechanism as *opportunity-mediated* here.

As shown in Chapter 2, much earlier research on intermarriage is done in the context of US society, where "race" is particularly salient as principle of social division. Evidently, both the Likeness-Breeds-Liking and the Dissimilarity-Breeds-Dislike mechanism is transferable to the social scientific notion of race, conceived of as *perceived* physical differences which acquire social meaning through the beliefs and actions of individuals (American Sociological Association 2003). This perspective draws on the fact that our skin color, facial features and

bodily differences matter, often with the result of racial discrimination.[26] The process does not have to be conscious. Psychological research using so-called *Implicit Association Tests* consistently displays a bias against blacks (Petersen 2006: 233) and a preference for light skin color.[27] How are these unconscious biases likely to affect Norwegian marriage markets?

Although most majority Norwegians would vehemently reject *racism*, the physical differences may serve as an indicator of cultural difference. Indeed, this is *statistically* true: when encountering an individual of non-European looks in Oslo, it is probably a valid induction that you have encountered a "foreign-cultural". "Cultural racism" denotes the view that prejudice has increasingly become a problem of culture more than a problem of skin color. In sum, being a visible minority (Rogstad 2000: 27) is probably a drawback in Norwegian marriage markets.

Both the Likeness-Breeds-Liking and the Dissimilarity-Breeds-Dislike mechanism have a desire-mediated and an opportunity-mediated interpretation, from the perspective of the immigrant population in Norway. Thus, whether because majority Norwegians reject foreigners on grounds of "race" and/or "culture", or because of the preferences of people with immigrant background, these two mechanisms suggest that the probability of exogamy is negatively related to the difference (measured by national background) between each individual of immigrant background and majority Norwegians.

Third Parties and Reference Group Theory

As suggested by Kalmijn (1998), family members or others within the ethnic or national-origin group can occasionally significantly influence spouse selection. Albeit this can lead to the choice being less voluntary (Bredal 2005, and see the parental influence mechanism below), it can also influence voluntary spouse selections. I suggest that *reference group theory* (basically, the mechanism that choices and evaluations are relative to a group of reference, see Merton [1968]) can explain the transference of both the likeness- and the

[26] As noted by the American Sociological Association (2003): ""Race" shapes the way that some people relate to each other, based on their belief that it reflects physical, intellectual, moral, or spiritual superiority or inferiority."

[27] A sample of tests developed by Harvard psychologists are available at: https://implicit.harvard.edu/implicit/Study?tid=. Although this attitudinal pattern is displayed most forcefully for whites, blacks actually also tend to have a preference for light skin color (Petersen 2006: 233). This probably reflects the degree to which predominantly negative images of this minority are diffused throughout US society. A similar situation may be at display in Norway, where the immigration-crime link is widespread in media (Eide and Simonsen 2007).

dissimilarity mechanism from third parties to the individuals choosing a spouse. Likeness-Breeds-Liking will mirror the belief that marriages between members of the same national-origin group are considered *agathogamy* (i.e. conforming to social norms) (Merton 1964: 130). If in-marriage is considered as conforming to social norms, Dissimilarity-Breeds-Dislike will instigate that third-parties perceive intermarriage as *cacogamy*, i.e. marriages that are taboo or deviant from norms (Merton 1964: 130). The point here is not simply that third parties exert direct influence on the spouse selection, but also that the beliefs connected to the predominant spouse selection patterns within the group will lead individuals to evaluate their choices according to the conceived values of the group (Merton 1968: 386). Crucially, individuals will primarily use their own national-origin group as point of reference for the choice of a spouse, and as such the probability of intermarrying will depend on the degree to which group members have intermarried before, which again will be signalled through the established norms of spouse selection within the group.

Keeping the Homeland Connection

We have seen that individuals are likely to prefer spouses to come from the same national and/or cultural group as themselves. Sometimes, the best way to achieve this is to find a spouse in your country of origin. Judging by the simple variation in group size (see below) and similarity to the majority population in Norway, one would expect significant variation in spouse import rates. This particular mechanism suggests that the latter more than the former factor plays into whether groups tend to import spouses or not. If differences between a group and the majority are at a maximum, it is not only reasonable that individuals will seek "input" from the homeland because they prefer them as spouses, but the third parties around the spouse-to-be might also have an interest in maximizing the probability that their future in-law will carry the right values, taste and knowledge *and* reinvigorate the relationship to the "homeland". Here, I suggest that the best way to secure this goal is importing a spouse from your country of origin, in particular if the distance to the majority population in practices and values is great.

The Vertical Mosaic Mechanism

It has been argued that receiving societies in the south-north global migration patterns have become "vertical mosaics", in that cultural, ethnic and racial diversity overlaps with

socioeconomic disparities (Porter 1965). Indeed, although Norway boasts high rates of employment and low rates of socioeconomic inequality, previous research has documented that immigrants from developing countries in Asia, Africa, and Latin-America to a disproportionate degree have low level jobs, low income and receive more social security transfers than the Norwegian majority (Hansen 2000; Barth, Bratsberg and Raaum 2004; Brekke and Mastekaasa 2008). As in many other post-industrial countries, Norway displays significant rates of assortative mating sorted by education, income and occupation (Kravdal and Noack 1989; Birkelund and Goodman 1997; Hansen 2002; Wiik 2010). To the extent that the immigrant population is different from the majority group in terms of income, education and occupation, these other forms of assortative mating can work against their possibility of exogamous relations with the majority. The *opportunity-mediated* Vertical Mosaic mechanism predicts that some of the differences between groups are linked to their varying degrees of economic, occupational and educational assimilation in Norway. This mechanism also suggests that the across-group effect of educational level will be related to between-group differences in educational level – and these differences will probably be related to the variation in intermarriage among national-origin groups.

The Logic of Numbers

The most blatant source of opportunity structure variation is demographics. The plainest example of an *opportunity-mediated* mechanism is what I call *the logic of numbers*, i.e. group size (Blau et al. 1982). This mechanism pertains to the brute availability of eligible spouses. In the case that there are few viable candidates in the national group (because the group is small, there is a shortage of men, or those available do not match your preferences otherwise), one option is to import a spouse. Another is to find someone whose background is *almost* the same. Evidently, the possibility of this is connected to the existence of potential spouses from the same region. This again depends on the size of groups originating from a country proximate to your own. However, the lack of available spouses in one's own group can provide a stimulus to search for a spouse in the vast stock of individuals with majority background. In this thesis, the distinct effects of group size are not directly analyzed. However, where relative size is unambiguously at variance between national-origin groups whose differences in spouse selection are unaccounted for, this mechanism might be at work.

3.2.2 Level of education

The Status Exchange Mechanism

Above, we saw that cultural resources are judged by the rule of similarity: attraction is considered inversely related to difference (Byrne 1971). Conversely, however, researchers contend that socioeconomic resources are judged by the rule of quantity: attraction is considered positively related to the amount of money, education and status possessed (Kalmijn 1998: 398). Following this logic, the so-called status exchange hypothesis was first proposed by Merton (1941). He started with the assumption that there is a status hierarchy in which immigrants and minorities are considered lower than the majority. However, Merton insisted that there is still a scenario in which minorities may intermarry with the majority: the minority may compensate by possessing other desired resources of a mate, e.g. higher income, higher education or high status occupation (Kalmijn and van Tubergen 2007: 378). This can be understood as an exchange of resources: although individuals of majority background might prefer mates from their own group, they are potentially charmed enough by an engineering degree or your success as a doctor to ignore your strange taste in food and odd religious rituals. Although there is empirical evidence of such status exchange from the US (Kalmijn 1993; Hwang et al. 1995, Qian 1997), the theme is not yet thoroughly investigated in Europe.[28] However, a status order based on the occupational match of spouses has recently been empirically established in the context of Norway (Chan et al. 2010). Although the association with education is moderate in this study (Kendall's Tau coefficient equals 0.33 for men and 0.41 for women), there is still a clear educational gradient in social status (Chan et al. 2010: 8-9)

The Tolerance Mechanism

An old cliché has it that education widens your horizon. One sense in which this seems to be true, is the strength of identification with ones own culture. According to several sociologists (Hwang et al. 1995; Kalmijn 1998: 401), higher education weakens the bonds people have to

[28] Strictly speaking, the *status exchange* hypothesis assumes that the majority spouse systematically has lower educational (or other socioeconomic) credentials than the minority spouse (Kalmijn and Van Tubergen 2006). This part of the hypothesis is untestable here, and I have thus chosen to focus on the idea that higher status increases the chances of getting a majority spouse.

their social and cultural roots. Another way of putting this is that they grow more tolerant vis-à-vis the foreign, the outlandish. Part of this is because they gain more knowledge and insight into other cultures and peoples. However, the decisive force behind this effect of education is probably the emphasis on individual achievement and universalism present in higher education (Kalmijn 1998: 401). Otherwise put, the organizational structure of a university may provide opportunities for intermarriage through promoting equality and diversity, thus blurring the cultural barriers against marrying out of ones group (Gonzalez-Ferrer 2006: 172). Recently, the association between education and immigrant-friendliness has been documented for majority Norwegians (Chan et al. 2010: 14). This mechanism suggests the reverse logic: that education boosts Norwegian-friendliness. Although the foundation of this process is knowledge, the Tolerance mechanism is *desire-mediated* because its ultimate result is a modification of the preferential spouse hierarchy.[29]

Universities as Marriage Markets

Marriage markets necessitate physical locations where people are able to meet and mate. To a certain degree, some of these places or arenas may be considered local marriage markets in themselves, especially if a large proportion of people present are available for romantic engagement. An institution of higher education is exactly such a place (Blossfeld and Timm 2003). Being a student involves meeting potential mates and spouses both day and night. A Norwegian illustration of this is the high rates at which doctors marry each other – boosted by the advent of female students in the medicine education (Hansen 2002). In the US context, Jacobson and Heaton (2000) found that while college attendance significantly promotes exogamy for blacks and Hispanics of both genders, it is negatively related to exogamy for white women. One explanation of this may be that white men flourish at universities, maybe even more so than in other societal arenas. However, this may also be related to the exchange mechanism, implying that highly educated majority women are less likely to marry minorities (because they need no exchange). Nonetheless, for young adults

[29] In an influential study, Hernes and Knudsen (1992) found that the relationship between education and tolerance vis-à-vis immigrants could be due to a *relative deprivation* mechanism: while well-educated Norwegians are unconcerned by competition from immigrants, their low-educated peers are vulnerable (Hernes and Knudsen 1992: 125). Although a parallel logic for immigrants' attitudes towards Norwegians is implausible (well-educated immigrants do indeed compete with Norwegians!), it may be the case that immigrants mirror the out-group tolerance of those majority Norwegians they interact with in everyday life, e.g. at work, a group likely to have similar levels of education.

with immigrant background, attending a university in Norway is a bullet-proof way of meeting peers of majority background. Needless to say, this mechanism is *opportunity-mediated*.

The Composition Mechanism

Despite the exchange mechanism, educational homogamy remains the dominant form of assortative mating, even in ethnically mixed marriages (Kalmijn and van Tubergen 2007: 378; Epstein and Guttman 1984: 250). What, then, happens if there are few within your national-origin "field of eligibles" who share your level of education? A situation arises where you have to choose between the preference for similar origins and similar rank in educational status. In Oslo, where a large proportion of Norway's immigrants reside, the share of people with higher education reached 37% as of 2001 (Statistics Norway 2002). Although there is considerable variation among the immigrant population, the comparable figure of several large non-western groups (e.g. Turkey, Somalia and Pakistan) is 10% (Statistics Norway 2001).[30] An important caveat, however, is the fact that several descendant groups display significantly higher educational rates than their parents' generation. Thus, the discussed situation is most pertinent for designated groups of immigrants. However, the opposite demographic situation may apply for these groups of descendants: in higher-educated national origin groups, having low education should increase the probability of marrying out (Kalmijn and van Tubergen 2010: 463). In sum, this *opportunity-mediated* mechanism indicates that if educationally different from the dominant tendency in ones national-origin group, a person may opt for education rather than ethnicity as the dimension of homogenous matching, which increases the likelihood of intermarriage.

3.2.3 Gender

Gendered Status Exchange

As depicted above, there is empirical support of Merton's (1941) hypothesis that low ethnic or racial status can be deflated by high socioeconomic status in intermarriages between

[30] It should be noted that all estimates of immigrant groups' educational levels are very fragile, as much information is missing about any education completed abroad.

majority and minority. This leads us to expect higher intermarriage rates of the highly educated immigrants. However, this *opportunity-based* mechanism is also pertinent for gender differences because it is believed that such exchange processes largely take place between a male minority and a female majority spouse. Chiefly, this rests on the assumption that most marriages still display a traditional male breadwinner-female homemaker division of labor. Indeed, Brekke (2008: 61) argues that women with immigrant background in Norway prioritize child rearing at the cost of full-employment to a larger extent than those of majority background. Further support of this is found in Kavli (2004). Thus, researchers have argued that men are more likely to be able to "compensate" for their ethnic minority status, and that the opposite exchange is less attractive (Kalmijn and van Tubergen 2007: 378).

The Patriarchal Mechanism

Although many societies in the world have progressed beyond conscious differential treatment of women and men, and while most countries have removed any legal prohibition against intermarriage, both patriarchial cultures and norms against exogamy persist. Indeed, it has been repeatedly demonstrated that interracial marriages continue to evoke emotional response from members of both majority and minority communities (Jacobson and Heaton 2008: 130). Within cultures adhering to a more traditional view of gender roles and norms, the sanctioning of intermarriage will most likely be directed more forcefully against women. The third parties of spouse-seeking females will thus disapprove of (or occasionally vehemently oppose) them choosing an out-group member. Rationalization of this often comes from the fact that women are primary caretakers of the children (Kalmijn and van Tubergen 2007: 378). Also, some authors have highlighted the fact that members of strongly religious groups generally do not accept that women find a spouse outside of her religious faith (van Tubergen and Maas 2007: 1071). According to a mainstream interpretation of Islamic law, Muslim women are prohibited from marrying non-Muslims, because the children resulting from such unions are considered lost to Islam (Vogt 2005: 115; Kulczycki

and Lobo 2002: 209).[31] Thus, less female exogamy among those of national-origin groups predominantly oriented towards the Muslim faith should be expected.[32]

The Divergence in Freedom Mechanism

We have seen that universities can function as marriage markets. Looking at this mechanism from the perspective of gender, however, suggests that this might be even more important for "non-western" women than for their male peers. The basic idea here is that young men are more likely to participate in organized sports and other activity outside of the group. That there are gender differences in sports and leisure among young immigrants and descendants has been documented in several reports (Løwe 2008; Vestel 2007: 151). Also, according to Hagelund and Loga (2009: 81), young women of immigrant background display disproportionately low levels of participation in civil society. Thus, assuming the fact that in some of the large immigrant groups in Norway, the opportunities for meeting members of the majority population are lower for young women – institutions of higher education appears even more desirable as a site for contact. By the logic of this mechanism, educational level might mean more for the intermarriage of women than for men, and in particular so for descendants – whose education is most likely to occur within Norwegian universities.

Sex Ratio

Above, the logic of numbers argued that group size impacts on intermarriage tendencies, through giving different opportunities at finding a spouse within the same group. However, strictly speaking, what really matters when analysing marriages between men and women is the amount of opposite-sex members of the same group! Thus, many researchers control for the sex ratio in each group when assessing spouse selection determinants (e.g. Kalmijn and Van Tubergen 2006; Van Tubergen and Maas 2007). Importantly, although some researchers have found that skewed sex ratios occasionally results in low marriage rates among some immigrant groups *per se* (Angrist 2002; Landale and Tolnay 1993), it is likely that it

[31] Another important reason given for this is that the husband has authority over the wife, and non-Muslims cannot wield authority over Muslims. Thus, by logical extension, women cannot enter inter-religious marriages (Vogt 2005: 114).

[32] Some Islamic scholars give the advice that any Muslim, both male and female, should refrain from marrying a non-Muslim (Vogt 2005:115). Indeed, the importance of religion for many Muslims and the widespread sanctioning of religious intermarriage for this group should make us expect low rates of majority intermarriage for both men and women originating in Islamic countries.

positively impacts both intermarriage and spouse import rates. By this logic, some groups are more likely than others to intermarry or to import a spouse, because the option of finding an endogamous spouse in Norway is limited by default. For some groups, the ratio is highly skewed in favour of women (e.g. Thailand, Philippines and Russia) – for others there are many men per woman (e.g. Iraq, Iran and Turkey) (Lie 2004: 21). As mentioned above, this group characteristic is not measured in my analyses, but as it is likely to influence the gender differences in intermarriage and import, it is crucial to know of the mechanism when discussing the results at the end of this thesis.

3.2.4 Generation

The Convergence Mechanism

Children of immigrants attend kindergartens, schools and tertiary education in the receiving society, with peers of majority background. They are (arguably to varying extents) socialized in the culture of the host society, watching the same television shows, doing sports and participating in many other leisure activities with majority Norwegians (Øia and Vestel 2007: 172). Non-western descendants (aged 19 to 24) attain higher education at a 32% rate, which is equal to the level of the majority population (Støren 2005: 91). When it comes to employment, the rates of descendants are more similar to majority Norwegians than immigrants (Olsen 2008), and their income and occupational attainment is generally on a par with their peers (Hermansen 2009). By the logic of most mechanisms cited so far, descendants share more dimensions with the native majority – and is thus more likely to engage in assortative mating despite not having the majority Norwegian family background. This mechanism also involves the assumption that descendants are less committed to traditional norms and expectations originating in their country of origin. As spouse import is considered a traditional choice of spouse, this indicates a reason to suspect less of this among the endogamous descendants than among the endogamous immigrants.

The Identity Mechanism

The Convergence mechanism puts emphasis on the closing gap between ethnic groups when considering the children of immigrants. Descendants simply share much more with their majority peers than immigrants share with their potential majority mates. One important

effect of this is that they *feel* more Norwegian than their parents, i.e. their national identification is not only that of their national-origin group. Among descendants, the share identifying as "Norwegian" in 2006 was 70.5 %. The corresponding figure for those born outside of Norway was 56.2 % (Øia and Vestel 2007: 44). Above and beyond the fact that they are objectively more similar, this should heighten the possibility that descendants actively desire a spouse with majority background. Although many descendants still identify as "foreigner" or "immigrant", there is reason to believe that their self-reported higher degree of identification with being Norwegian can result in higher rates of intermarriage with the population of majority background. While the Convergence mechanism influences both the marriage market opportunity and spouse preferences of descendants, the Identity mechanism is *desire-mediated*, as the widened scope of "eligible partners" comes as a result of shifted desires.

The Tipping Point Mechanism

In combination, the fact that there is more convergence and identification between descendants and their peers in the majority population, vs. that of immigrants cannot only explain increased intermarriage among this group – it also suggests that educational level might be even more important for the intermarriage of descendants. The logic of this mechanism is that there is less difference towards the majority for the latter group *while holding educational level constant*. Thus, the match along some of the crucial variables predicting attraction (e.g. similarity of taste, language and values) is already more likely than for immigrants – and the gap between being unattractive and within the field of "eligibles" is almost closed. If the educational level then matches (and even more so if institution of higher education matches, see next mechanism), the probability of finding a spouse from the majority is higher than for immigrants at the same educational level.

Universities as Marriage Markets

As argued above, institutions of higher education can function as local marriage markets. However, as descendants following higher education tracks are more likely than immigrants to do this in Norway, this mechanism indicates that educational level might be more important for their intermarriage propensities than for that of immigrant groups.

3.2.5 Age at marriage

The Parental Influence Mechanism

Previous research (Kalmijn and Van Tubergen 2010: 467) has shown that those coming from a country with tradition of early marriages are more likely to marry within their group. The Parental Influence mechanism suggests that parents have more influence on the decision of a spouse in such cases, and parents' preferences will tend to be endogamous (Kalmijn 1998). Although the degree to which individuals choose their spouse independently (without pressure from parents or other family members) is reported to be fairly high in a recent survey of Pakistani, Turkish and Indian descendants (Daugstad 2009), there is still reason to think that age at marriage signals maturity and autonomy vs. the parents – and that this influences the outcome of spouse selection. By this logic, the grip of third parties weakens if marital age is higher; this is likely to impact the degrees to which individuals import a spouse as well (Lievens 1999).

3.3 Summary of empirical expectations

Below, Figure 3.1 summarizes the expected empirical relationships between the independent variables and both types of spouse selection outcomes. This last section seeks to formulate empirical hypotheses on the basis of the mechanisms proposed above. In many cases, several mechanisms indicate the same hypothesis.

Acting as a proxy for skin color, ethnicity, language and culture, national and regional background is expected to have significant impact on endogamy and exogamy. It is not feasible to detail expectations about the large set of national-origin groups included in my analyses. However, the following sketch should provide some idea of what groups are likely to be most endogamous and prone to spouse import.

Although an accurate rating system of "cultural distance" is nonsensical, it is rather the *perceived* differences both from the perspective of majority Norwegians and the immigrant population that matters here. People originating in other countries in the Nordic region are culturally (and linguistically) very similar to Norwegians. People from the north-west of Europe, the US and Canada share significant amounts of culture (often referred to as

"western culture") with majority Norwegians. As seen in Chapter 2, there are signs that being deeply religious often carries strong preferences of finding a spouse of the same faith. Several of the large national-origin groups of the immigrant population of Norway, such as Pakistanis, Turks, Iraqis, Somalis and Moroccans, are predominantly Muslim. Because African groups have particularly visible minority appearance (i.e. "racial" features) and display relatively low levels of socioeconomic performance, high levels of endogamy and spouse import is expected.

Hypothesis 1a: *Individuals from Asia and Africa are most likely to be endogamous* and *import spouses, while individuals from North America/Northern Europe and the Nordic countries are most likely to intermarry with the majority population.*

Hypothesis 1b: *Differences in spouse selection patterns between national-origin and regional groups will largely prevail after controlling for the other independent variables included in this thesis.*

While common values, taste and knowledge are important for being within what sociologist Robert Winch called "the field of eligibles" (Epstein and Guttman 1984: 257), we have seen that having the same national background is not the only way of securing these denominators. The explanatory mechanisms suggested for education and spouse selection all point in the same direction: education influences the probability of exogamy positively and the probability of import negatively. According to the Status Exchange mechanism, we should see more reduction of the impact of national background for "non-western" immigrants and descendants than for "western" groups, when controlling for education.

Hypothesis 2a: *The higher the level of education, the more likely an individual is to intermarry (in general), and the less likely an endogamous individual is to import a spouse.*

Hypothesis 2b: *Educational level impacts differently on the intermarriage rates of groups, depending on the perceived status attached to the group.*

According to the international literature, the degrees to which there are gender differences in intermarriage rates vary. For the most part, minority men display a higher probability of intermarriage than minority women, with the exception of some Asian groups (Jacobs and

Labov 2002). The mechanisms of patriarchal culture, divergence in freedom and sex ratio indicates the following hypotheses:

Hypothesis 3a: *Men are more likely to intermarry, except for Eastern Asian groups (where women are more likely to intermarry).*

Hypothesis 3b: *The effect of educational level on the probability of intermarriage is more forceful for women than for men, in particular for descendants.*

Table 3.1 Summary of empirical expectations

Variable	Intermarriage	Spouse import	Intermarriage mechanisms	Spouse import mechanisms
National-origin group	Asian and African groups more endogamous and more prone to spouse import, North European and American groups more prone to intermarriage		*Likeness /Dissimilarity/Reference Group*	*Keeping the Homeland Connection/Reference Group*
xEducational level	**+** "Non-Western" groups		*Status Exchange*	
Educational level	**+**	**-**	*Status Exchange, Tolerance, Composition*	*Universities as Marriage Markets*
Gender	**+** Men	**+** Men	*Status Exchange, Patriarchy*	*Sex Ratio*
xEducational level	**+** Women	**+** Women	*Divergence in Freedom*	
Generation	**+** Descendants	**+** Immigrants	*Convergence, Identity*	
xEducational level	**+** Descendants	**+** Descendants	*Tipping Point, Universities as Marriage Markets*	*Universities as Marriage Markets*
Age at marriage	**+**	**-**	*Parental Influence + Likeness-breeds-liking*	

The behavior of immigrants' descendants (second-generation immigrants) has been considered crucial for the evaluation of how successful the receiving society manages to incorporate and integrate ethnic minorities. For many assimilation theorists (Gordon 1964; Lieberson and Waters 1988; Pagnini and Morgan 1990) intermarriage rates represent the ultimate litmus test of full incorporation. The convergence and identity mechanisms try to explicate the reasons why the spouse selection of descendants is expected to be dissimilar from that of immigrants, resulting in the following hypotheses:

Hypothesis 4a: *Descendants of both sexes are more likely to intermarry than immigrants, and less likely to import a spouse.*

Hypothesis 4b: *Educational level has greater impact on the intermarriage rates of descendants than those of immigrants.*

The parental influence mechanism suggests that the younger a person is at marriage, the more likely her parents are to influence the decision. The probability that parents will want their in-laws to be of their "kind" is high.

Hypothesis 5: *Age at marriage has a positive association with intermarriage, and a negative association with spouse import.*

While this chapter has presented the theoretical apparatus with which I intend to interpret the empirical results of this thesis, there is also a need to convey the empirical grounding and methodical tools utilized to discover these facts. Thus, the next chapter conveys the data, design and methods used in Chapters 6 and 7.

4. Data, design and methods

This chapter depicts the empirical basis and the methodological tools utilized in the analyses. Opening with a description of the dataset, I subsequently offer a survey of operationalizations for all variables, including some descriptive statistics pertaining to these. Then, there is a brief section describing the rationale for my choice of methodological design. The final section provides an assessment of the statistical tool employed – *logistic regression* – and how this instrument helps me analyze the data.

4.1 The data

Based on a system developed in the early 1960s, the administrative records kept by population registry offices, educational institutions, tax registers etc. can be used to track each and every Norwegian resident's behavior longitudinally (Lyngstad & Engelhardt 2009: 176). This thesis is based on such administrative registers, made available to students through the research project *Educational Careers: Attainment, Qualifications, and Transition to Work.*[33] Information is pulled from the National Database of Education (NUDB) and the historical event database "FD-Trygd". The data counted the complete stock

[33] This project was led by Arne Mastekaasa, with Gunn E. Birkelund & Marianne N. Hansen as partners, all professors at the Department of Sociology and Human Geography, University of Oslo. For more information on the project: http://www.iss.uio.no/forskning/prosjekter/educational_careers/

of all married couples involving at least one person from the immigrant population at the end of 2002.

On the one hand, population-wide register data circumvent the problems of bias and non-representative sample selection in regular survey designs (Hermansen 2009: 46; Røed and Raaum 2003: 261). Further, the numerical volume of such data provides a sounder basis for analyzing differences between subgroups (Daugstad 2009: 8, 59). Presently, the subpopulation consisting of immigrants' descendants who are registered in a marital union is too small to be analyzed properly using a survey design.

On the other hand, the information retrieved from official records provides no direct access to people's attitudes, values, political or religious affinities (or other things deemed private or subjective). Although these characteristics probably co-vary with partner choice rates, these are thus outside the scope of my data.

4.1.1 Preparation and selection

My dataset contains information on the complete stock of marriages on December 31st 2002, and thus does not enlighten us on incident rates varying from period to period. The original file contained 188,522 individuals, representing the stock of marital unions (94,261 couples) involving at least one person from the immigrant population as of 2002. The first major exclusion was driven by missing information on a crucial identifying variable: time of marriage. A total of 18401 couples were deleted, most of whom were probably immigrants married abroad.[34] Hwang and Saenz (1990) demonstrate that the inclusion of immigrants married abroad (IMAs) leads researchers to overestimate endogamy among minorities, as well as the endogamy of older cohorts among the immigrant group. Through the construction of a numerical variable depicting years married minus years of residence, all couples in which the "anchor" of the spouse import was Norwegian or where both spouses had married before being registered residents of Norway were deleted. The remaining couples were those

[34] Prof. Arne Mastekaasa advised me of this. Appendix E displays a contingency table of couples' composition according to immigrant category, before and after the elimination. Out of 18,401 a total of 17,579 were immigrant-immigrant couples, 760 were most likely cases of Norwegian import, leaving 62 immigrant-descendant pairs (in addition to 17 who were sorted out for missing value on immigrant category). The importance of the exclusion of this group is hard to evaluate – but the likelihood of them being cases of import is high, and they may thus involve a selection bias concerning the evaluation of descendants' import patterns.

in which the "anchor" was part of the immigrant population, as well as the clearly "domestically" married.[35]

As reported in Table 4.1, my final dataset includes 55,293 individuals, representing 35,192 couples. Converting the file unit from couples to individuals, a sum of 15,091 was excluded because they were imported to Norway as spouse, the vast majority (11,388) of which were women. Because of this, the sum of all numbers beneath the "original population" couples count will not cohere with this quantity.

Table 4.1 The selection process

Population	Couples	Individuals
Original population	*94,261*	*188,522*
Missing marriage date (IMAs)	*18,401*	*36,802*
Registered foreign marriages	*9,156*	*18,312*
Norwegian import	*11,411*	*22,822*
Subpopulation analyzed	*35,192*	***55,293***
- marital import	*7,546*	***15,091***
- domestic marriage	*20,101*	***40,202***

When analyzing the influence of various variables on partner choice as an outcome, it is crucial that the activity depicted by independent variables takes place *before* the marriage (Kalmijn 1998). Obviously, the spouse or the act of marriage itself may influence key characteristics of individuals in the proximate period after getting married. Technically, this was solved by including exclusively information registered prior to the marital date as it was recorded in the administrative registers.

[35] For the specification of spouse import, see the pertinent subsection of operationalization below. As is described there, I treated all those married within the first year after migration as imported. To be consistent, I have thus also chosen to delete the cases in which a Norwegian has married someone who immigrated within the same year as the marriage – as these are equally likely to be cases of "Norwegian" import.

4.2 Operationalizations

4.2.1 Dependent variables

Endogamy vs. exogamy

The first dependent variable is a measure of endogamy and exogamy, and was constructed as a triple-outcome categorical variable at the nominal level of measurement. Following Kalmijn and van Tubergen (2010), the categories are

(0) endogamy,

(1) exogamy with member of majority population and

(2) exogamy with member of immigrant population.

Endogamy occurs when spouses come from the same national-origin group. Majority exogamy occurs when an individual from a foreign national-origin group is married to someone with Norwegian background. Minority occurs when an individual from a foreign national-origin group is married to someone from a different foreign national-origin group.

Spouse import[36]

The second dependent variable is a measure of spouse import, represented as a dummy variable. Measurement of the two outcome categories

(0) domestic marriage and

(1) spouse import

was made possible by calculating difference between year of marriage and year of immigration. Those marrying a residing member of the same national-origin group before entering or within the same year as entering the country were deemed imported spouses. The

[36] The operationalization of this variable was subject to several rounds of discussion and tentative analyses. In Appendix D, there are examples of results generated by another operationalization than that presented in this thesis, which excluded all immigrants whose marriage occurred within two years after being registered resident in Norway. This impacted both on intermarriage and import estimates.

inclusion of those marrying shortly after arriving is legitimated by the fact that these are very likely to be planning marriage before arriving – an hypothesis corroborated by the juridical arrangement of "engagement visa".[37] Like Gonzalez-Ferrer (2006: 174), I also include situations in which the actual migration occurs several years after marriage. The latter cases amount to 70% of the imported in total count.[38]

Table 4.2 Description of data by dependent variable outcomes

Population			
Endogamous immigrants and descendants		Exogamous immigrants and descendants	
Domestically married	Spouse import	Married to Norwegian	Married to other immigrant or descendant

4.2.2 Independent variables

National-origin group

I differentiate between groups in accordance to the measure of national ancestry provided by Statistics Norway (i.e. country of origin). The spouse selection rates of 43 immigrant groups (*N*=>80) are depicted in the next chapter. However, only 5 large "non-western" national groups are singled out in the multivariate analyses: Pakistanis (*N*=5080), Turks (*N*=2912), Vietnamese (*N*=3243), Moroccans (*N*=1649), and Indians (*N*=1608). The remaining national groups of the immigrant population are merged into regional categorizations. Following the official schema of Statistics Norway, the categories are: the Nordic countries, Western Europe, Eastern Europe, Africa, Asia, and South- and Central America (Lie 2004: 42) – while North America and Oceania were conflated because of their low count and similarity in spouse selection rate (see Table 5.1).

[37] It should be mentioned that this arrangement carries rather strict requirements to be fulfilled. Information on this from the immigration authorities can be retrieved at: http://www.udi.no/Sentrale-tema/Familieinnvandring/Forlovelsestillatelse-besok-for-a-gifte-seg-i-Norge/

38 Some publications on spouse import (e.g. Henriksen 2010) discuss both cases of family forming migration (i.e. spouse import as conceived here) and family reunification through immigration. The notion of "spouse import" is literally more accurate in the latter case than in cases where a couple is formed through spouse selection and subsequent immigration. Nonetheless, my concern here is the spouse selection of Norwegian residents while they reside in Norway, not their spouse selection behavior in their former country.

Generation

As is customary in research on the immigrant population, the study differentiates between immigrants and their descendants (also called "first and second generation immigrants").

To boost the head count for the small group of immigrants' children, I included all early immigrants (beneath seven years of age at arrival) in the descendant category. This group numbered 872 men and 1166 women. The fact that these individuals are exposed to Norwegian primary education and other aspects of the receiving society from an early stage makes it reasonable to expect behavior more similar to descendants rather than those older at migration (Birkelund and Mastekaasa 2009). A recent systematic comparison between early immigrants and descendants concludes that these groups have much in common, compared to immigrants (Henriksen 2009: 28). In sum, the generation variable is thus coded

(0) immigrant (aged >6 at immigration)

(1) descendant (including immigrants aged <7)

Length of stay before marriage

For all immigrants, the time span between age at immigration and marital age was calculated in years, and this continuous variable was transformed into a categorical version with the following intervals:

(0) 1-2 years

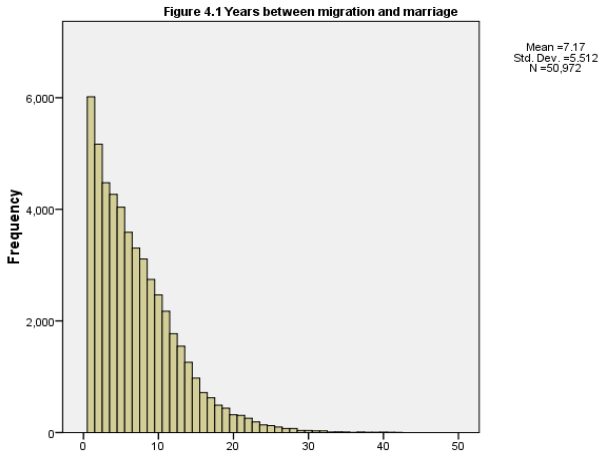
(1) 3-5 years

(2) 6-9 years

(3) 10-15 years

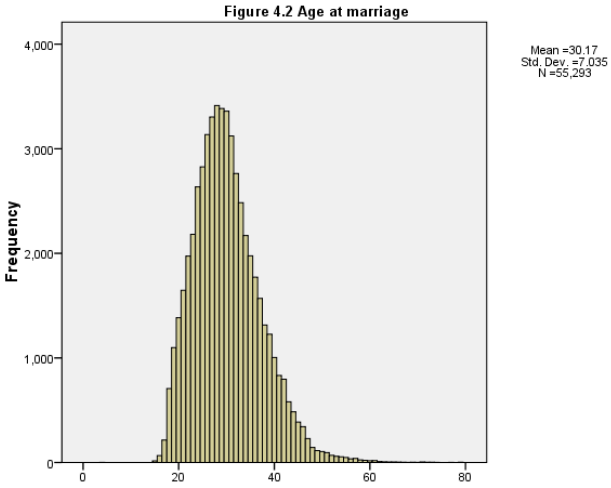
(2) 16-42 years

As seen in the subsequent Figure (4.1), the distribution of this variable is heavily skewed towards residing only few years before marrying.



Age at marriage

This variable is measured in years, and to ease interpretation and avoid collinearity between the variable and its quadratic term (which is included to detect curvilinearity) the variable is centered on its mean (i.e. the mean of each subgroup analyzed is subtracted from its value, making the value of the mean 0 in all groups) before included in the analyses. This makes the estimates appear in standard deviations from the mean. Beneath (Figure 4.2), the population distribution on this variable shows that the average marital age is 30 years.



Gender

The differences between men and women are captured in two different ways in this thesis. First, all models including the whole population and those separating national-origin groups include the dummy "male", measuring the average effect of being a man vs. being a woman. Second, the rest of the regressions are run separately for men and women.

Educational level

In studies of homogamy linked to social status, many researchers seem to agree that education is the best proxy measurement for socioeconomic differences between couples and individuals (Gardyn 2002: 34; Epstein and Guttman 1984: 255). It is more reliable than income or occupation, because it rarely changes throughout the life course (Hwang, Saenz, & Aguirre 1997). In this sense, educational level is more likely to have stabilized prior to union formation than other proxies for socioeconomic status.[39] Additionally, it serves as an indication of earnings potential, without excluding all those without registered employment. Finally, education can have many distinct influences on spouse selection – several of which are disconnected from income and occupation at the level of action-based mechanisms.

I us information on the highest education obtained by each individual, based on the National Database of Education's (NUDB) NUS-2000 code. Educational level was originally specified as a 9-point scale variable, which I have reduced through a re-categorization into 5 levels:

(1) primary school education

(2) lower (uncompleted) secondary education

(3) higher secondary education .

(4) lower tertiary education (BA degree)

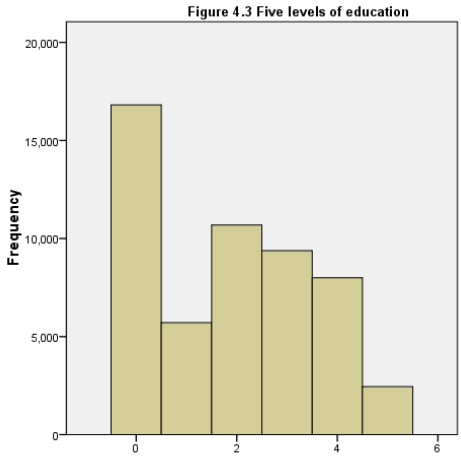
(5) higher tertiary education (MA degree)

In the separate analyses of national-origin groups, the lower and higher levels of both secondary and higher education are conflated, making it a 3-levels variable.

The group with missing information on the education variable (0) is included as a separate category, because of its size (20%). Students are included in the analyses, registered with

39 However, some groups display significant proportions of marriages entered before finished education – and here, this is particularly common among descendants.

their last known completed educational level. The distribution of the analyzed population on this variable is seen in Figure 4.3.



Place of residence

In most receiving countries, Norway included, immigrants and descendants disproportionately inhabit big cities. Thus, several authors (Dribe and Lundh 2008; Jacobson and Heaton 2000) have found that metropolitan residence particularly increases ones chances of intermarriage to other minorities. In Norway, immigration is not so much an urban phenomenon as an Oslo phenomenon. Not only does the capital have a percentage of inhabitants with immigrant background more than twice as high as the national average, but about half of all with "non-western" origins and even a larger share of those with African or Asian background lives in the Oslo area (Forgaard 2006). After running analyses with place of residence categorized by regional part of the country (Western, Northern, Southern, Eastern and Oslo) which yielded largely small and statistically non-significant differences between the regions, I settled for the simple dummy variant of Oslo vs. outside of Oslo.

4.3 Statistical tools

4.3.1 Choice of statistical design

Many analyses of intermarriage and homogamy have applied *log-linear models* (Kalmijn 1998). This approach treats couples as the unit of analysis, and allows one to analyze multivariate frequency tables of categorical variables *while* controlling for group size and sex

ratio (marginal distributions) as a default (Trilla et al. 2008: 881). Crucially, this is made possible by the aggregation of all units into categories (e.g. level of education). Design-wise, log-linear analysis boasts the advantage that the phenomenon of partner choice is examined from the perspective of both spouses. This phenomenon is two-sided through and through: one does not choose a partner in the way that one chooses a career, or a material acquisition such as a house or a car. The potential partner in question also has a saying. The two-way tables of log-linear models more accurately mirror this aspect of partner choice dynamics.

However, there are important limitations with the log-linear approach, the most important of which is its inability to include many independent variables (Heaton & Jacobson 2000: 33). This is due to the reliance on the two-way aggregated cross-tabulations, which necessitates many observations on all combinations of the variables investigated. If many factors are put into the model, the cross-tabulation of log-linear analysis becomes too large – and a great number of variables in the tables results in many empty cells (Jacobs and Labov 2002: 628).

Thus, the major argument favoring regressions over log-linear models is its overt strength in including many covariates to test various theoretical predictions (Kalmijn 1998: 418-419). The potency of regression analyses is linked to their capacity to provide a quantified expression of both the strength and direction of each factor's correlation with another, whether they interact statistically, and whether there are confounding relationships between any of the variables (Skog 2007: 214).

Both dependent variables in this study are categorical. In such cases, the technique of *logistic regression* is apt, because the distribution of categorical outcome variables involves different technical assumptions than that of numerical ones (Skog 2007: 379). As described above, my analytical strategy involves two dependent variables: one specified as a three-outcome variable, requiring *multinomial* logistic regression, and one having two outcomes, requiring *binomial* logistic regression.

4.3.2 Logistic regression

Linear regression cannot be implemented on a categorical dependent variable, because several of its inbuilt assumptions are violated (Tufte 2000: 13-16). Most fundamentally, the assumption of linearity (implying that all changes in the outcome variable as an effect of one

unit increase in an explanatory variable are constant) is invalid.[40] In logistic regression models, the linearity of the explanatory variables in relation to the dependent variable is made possible by a logarithmic transformation of each probability estimate of the dependent variable's categories (Andersen 1997: 157). This process includes two principal steps. First, one must recalculate the probability estimate into so-called *odds*, defined as the probability of an event divided by the probability of it not occurring (Skog 2007: 355):

$$odds = \frac{p}{1-p}$$

The principal achievement gained by this recalculation is removing the upper barrier of the estimates as conceived in probabilities (from 0 to 1), because odds range from 0 to $+\infty$. However, the values of dependent variables should also be able to climb beneath 0, to negative numbers. To address this, the odds is transformed into its natural logarithm, creating a mathematical expression known as the *logit* (Tufte 2000: 21):

$$\log = \ln\left(\frac{p}{1-p}\right)$$

Here, *ln* denotes the natural logarithm (the exponent of the natural number *e* [2,718] required to calculate the original number). Thus, the logit is nothing but a logarithmic expression of the odds (and consequently often goes by the name log odds). With this expression, the relationship between variables can be depicted as a linear function on the *logit scale* (Skog 2007: 355). This wields the advantage of restoring linearity and symmetry to the model: a "logit" coefficient is either above 0 (in which case the relationship is positive, and the probability is >0.5) or below (in which case the relationship is negative, and the probability is <0.5) (Skog 2007: 357). The binomial logistic regression can be formulated in the following equation (Tufte 2000: 22):

$$\log = \ln\left(\frac{p}{1-p}\right) = b_0 + b_1x_1 + \ldots + b_kx_k + e$$

[40] Although there are more technical reasons for abandoning OLS when dealing with categorical variables (the heteroscedastic and non-normal distribution of residuals), it is the unacceptable assumption of linear probability which weighs in heaviest (Tufte 2000: 16).

Here, b_0 denotes the regression intercept, i.e. the value of the logit when all independent variables have the value 0, b_1 etc. are the regression coefficients of the independent variables denoted by x_1 etc., and e represents the residual (i.e. the variance in the dependent variable not explained by the independent variables).

Multinomial logistic regression is a technique suited for cases when the categorical dependent variable has more than two outcome values, but these are not ordered in any meaningful way.[41] In such cases, the dependent variable is decomposed into dummy variables, i.e. dichotomous variables which all have the same reference category (Tufte 2000: 55). In my case, the multinomial regression is a simultaneous estimation of two binomial models, consistently calculated against a category chosen as reference (Cristophersen 2009: 188). The equation for this regression model is

$$\log = \ln\left(\frac{p_{ij}}{1-p_{iJ}}\right) = b_j x_i \qquad \text{J} = 1, \ldots, \text{J} - 1$$

where $_i$ represents individual observations and $_j$ represents the categories of the dependent variable. Thus, in my case J-1 (the number of intercepts) equals 2, because the dependent variable has three categories.

Technically, the only divergence in interpretation from the binomial case is that the estimates can be compared to the reference category alone (Skog 2007: 314). Thus, Tufte (2000: 56) advices to pick a reference category that there is particular theoretical interest in comparing with the other outcomes. Diverging from Kalmijn and van Tubergen (2010), I elect the category of endogamy as reference for the dummies, thus contrasted with majority exogamy and minority exogamy. This choice is warranted by the fact that comparisons between endogamy and the two variants of exogamy are more interesting than pairing the two types of exogamy in a dichotomy. I believe the former is a more realistic representation of the selection patterns: for most individuals in my data set, endogamy seems to be the most liable

[41] For the case in which the categorical dependent variable has ordered outcomes in plural, *ordinal logistic regression* is suited (Tufte 2000: 53).

option – compared to the less likely outcomes of those who (for reasons presented in the analyses) choose a spouse outside of the group.[42]

Although the regression results in odds ratios (OR) are more accessible for interpretation than logits (Skog 2007: 364), coefficients in odds ratio have a less intuitive interpretation than predicted probabilities. Because my tables are overall big enough, I thus limit myself to reporting the parameter estimates in logits (which indicate the direction and relative strength of relationships) and select the most important outcomes for translation into predicted probabilities, as these are more feasible for the substantial understanding and illustration of my results (Skog 2005: 363).

4.3.3 Model fit and significance testing

A palpable strength of (much) quantitative research is the possibility of making generalized claims. In the statistical analysis of empirical relationships, this force is acquired through *deductive hypothesis testing* of the estimates (Ringdal 2001: 290). The existence of measurement errors even in register data makes statistical tests desirable, to have an idea about the precision of estimates. In addition, there is the argument that individual behavior is best viewed as stochastic processes subject to random variation (Hoem 2008: 439). Thus, when the goal of statistical analysis is not only to describe variation within the population, but also linking the findings to theories, the non-deterministic nature of human behavior warrants tests of the precision of each coefficient retrieved (Rubin 1985: 518).

For all individual estimates in the logistic regression models, I report results of the Wald test statistic as measure of significance. The Wald test is calculated in the manner of a t-test in OLS regression, and is mathematically simply the squared version of the former formula (although it is a bit stricter in practice) (Skog 2007: 374):

$$Wald = \left(\frac{b^1}{SE(b^1)} \right)^2$$

[42] Thus, the multinomial regression model will not inform us about the predicted probability of majority exogamy vs. non-majority exogamy (the two non-referential categories).

With a high total count of observations, this test statistic has a probability distribution close to that of the Chi-square distribution with one degree of freedom (*df* = 1), given the correctness of the null hypothesis (Skog 2007: 374). However, when numbers are small, the probability distribution may not approximate the Chi-square distribution, potentially leading to erroneous test results.

Logistic regressions are estimated using the Maximum Likelihood method. The "likelihood" function can also be used for testing of the model's improvement given inclusion of new independent variables. Using the *–2LL* statistic, SPSS compares a model matching the null hypothesis (*–2LL0*) and our model (*–2LLA*) with respect to whether our independent variables give a statistically significant improvement of fit to the data (Skog 2007: 375). The numerical difference between these is called the log likelihood ratio (LR). Crucially, the *–2LL* decreases between the null hypothesis model and the alternative model if the model fit improves.

In linear regression, the R^2 statistic ("explained variance") is straightforwardly interpreted as the proportion of explained variance that all variables in the model are responsible for together (Ringdal 2001: 399). This statistic from linear regression does not have an accurate corresponding measure among logistic regression models. However, multiple procedures involved in the evaluation of logistic regression analyses attempt to mimic the properties of the R^2 statistic (Ringdal 2001: 436). I have opted to report the so-called *Nagelkerke* test statistic $\left(R^2_{\ N}\right)$. Nagelkerke's R^2 is based on the log likelihood function, and can obtain the maximum value of 1 (in which case the model fit is perfect) (Skog 2007: 419). [43]

[43] All of the measures reported are valid tests of significance and model fit both in the binomial and multinomial case, and the estimation methods and interpretation are analogous between these two types of regression (Tufte 2000: 56, 59).

5. Spouse selection patterns and descriptive statistics

This chapter seeks to establish the degrees to which individuals of different national-origin are intermarrying and importing a spouse. As such, it presents bivariate analyses of how groups are distributed according to the outcomes on both of my dependent variables. This is a crucial step before examining the factors influencing these spouse selection outcomes in the following chapters. First, contingency tables of endogamy and exogamy are presented. Second, we turn to the endogamous, reviewing their propensity to import a spouse from their country of origin. Lastly, we review some of the descriptive statistics of the other independent variables in our data.

5.1 Endogamy and exogamy

5.1.1 Immigrants

In Table 5.1, the intermarriage percentages of immigrants coming from sixty-one different national-origin groups are depicted. First, the overall tendencies should be noted. On average, 42% of men and 36% of women who have married in Norway after immigrating are endogamous. While 38% of men and 45% of women married a person from the Norwegian

majority population, 20% of men and 19% of women found a spouse from another national-origin group in the immigrant population.[44]

Now, the conspicuous variation in rates of endogamy and exogamy should be noted. Although there is considerable variation within some of the regions categorized in table 5.1, the average tendencies of endogamy and exogamy between these regions form a gradient pattern. Individuals from Western Europe are least endogamous, and a relatively larger share of intermarriages than the population mean are with majority Norwegians. Next, the Eastern Europeans are significantly more inclined to choose a spouse from their own group – in terms of national origin, evidently, but possibly also by region, as their minority exogamy is on average higher than the population mean. For this group, women are on average more exogamous than men. However, the opposite holds for Africans, where men are significantly more majority exogamous than women, while the across-sex endogamy average visibly surpasses that of Eastern Europeans. The last step of this intermarriage continuum is represented by Asians, whose marital choices are pointedly more endogamous than Africans – particularly when leaving out the outliers of Israel, Thai and Filipino women. Among the Americas, USA, Canada and Mexico display a pattern akin to Western Europeans with low endogamy and high majority exogamy – while the miscellaneous "non-western" groups from South- and Central America are more endogamous. In general, there is more variation in the balance between endogamy and majority exogamy, while the mean for minority mixing is close to 20% for all regions.

In comparison with previous Norwegian research (Lie 2004, see Chapter 2), the findings show that excluding immigrants married abroad and those imported by majority Norwegians lowers the intermarriage rates of Nordic and some other "western" groups, while it generally increases the intermarriage estimates of "non-western" groups (although obviously not for the groups from which many Norwegians import spouses). Thus, we can conclude that previous findings (including immigrants married abroad) miscalculate the "openness" of group relations between "non-western" and the majority population.

[44] It should be remembered that the sample upon which these analyses are run is heavily unbalanced in terms of sex, because all those immigrants living in Norway as a result of being imported by a resident are excluded – and appears only as a characterization of the individuals analyzed here (i.e. their spouse). This group contains vastly more women than men, and this is displayed in the skewed number of observations reported at the end of all tables.

Table 5.1 Intermarriage Percentages by Country of Origin, Immigrants in Norway as of 31.12.2002.

	MEN				WOMEN			
Region and country of origin	% Within Group	% With Majority	% With Other	*N*	% Within Group	% With Majority	% With Other	*N*
Western Europe								
Denmark	17,6	68,6	13,8	*1610*	15,7	73,4	10,9	*1792*
Finland	28,7	57,7	13,6	*411*	15,8	68,5	15,8	*723*
Iceland	45,2	42,0	12,8	*343*	39,4	48,6	12,1	*414*
Sweden	16,2	69,4	14,4	*1786*	11,8	76,6	11,7	*2326*
Netherlands	22,6	59,6	17,8	*394*	22,5	61,6	15,9	*289*
France	14,3	61,8	23,9	*251*	9,0	68,9	22,0	*177*
Greece	4,3	80,9	14,8	*115*	13,3	80,0	6,7	*15*
Great Britain	14,0	66,6	19,4	*1257*	13,6	69,8	16,6	*616*
Spain	8,5	70,6	20,9	*153*	6,3	73,2	20,5	*112*
Italy	13,6	64,4	22,0	*118*	9,1	75,8	15,2	*66*
Switzerland	9,8	67,1	23,2	*82*	9,2	72,3	18,5	*65*
Germany	18,3	61,2	20,6	*618*	15,5	67,4	17,1	*619*
Eastern Europe								
Poland	62,8	27,4	9,8	*368*	19,2	65,4	15,4	*751*
Portugal	8,2	61,2	30,6	*85*	4,7	65,6	29,7	*64*
Romania	44,6	33,8	21,6	*74*	14,3	66,9	18,8	*133*
Russia	47,1	37,3	15,7	*102*	6,8	77,3	15,9	*453*
Hungary	19,9	55,9	24,3	*136*	3,5	77,2	19,3	*171*
Bosnia-Hercegovina	74,0	11,1	14,9	*651*	76,5	10,4	13,1	*520*
Macedonia	52,1	20,4	27,5	*309*	51,2	9,4	39,4	*127*
Czech Republic	32,8	32,8	34,4	*64*	20,3	55,9	23,7	*59*
Bulgaria	39,6	51,4	9,0	*111*	24,1	64,6	11,4	*79*
Croatia	40,0	27,0	33,0	*185*	37,4	26,7	35,9	*131*
Serbia and Montenegro	58,6	26,5	15,0	*956*	65,0	14,5	20,5	*448*
Africa								
Algeria	36,7	52,9	10,4	*240*	43,9	24,4	31,7	*41*
Eritrea	65,1	4,4	30,5	*272*	70,7	7,3	22,0	*123*
Ethiopia	67,0	9,9	23,0	*191*	68,8	10,2	21,1	*128*
Gambia	31,9	53,8	14,3	*405*	61,3	24,7	14,0	*93*
Ghana	61,9	26,9	11,2	*312*	68,5	19,8	11,7	*111*
Kenya	33,8	35,0	31,3	*80*	14,9	48,3	36,8	*87*
Morocco	60,3	32,3	7,4	*1223*	77,0	11,3	11,7	*426*
Nigeria	43,5	36,4	20,1	*154*	52,5	20,0	27,5	*40*
Somalia	88,6	3,6	7,8	*526*	82,4	4,5	13,0	*376*
Tunisia	30,9	59,1	10,0	*259*	47,4	26,3	26,3	*19*
Uganda	25,8	21,2	53,0	*66*	15,8	44,7	39,5	*38*

(continued)

(Table 5.1, continued)

Asia								
Afghanistan	63,7	6,6	29,7	*91*	60,0	0,0	40,0	*30*
Bangladesh	70,7	17,2	12,1	*116*	73,5	11,8	14,7	*34*
Sri Lanka	91,3	4,5	4,2	*2033*	92,3	5,7	2,1	*775*
Phillippines	84,4	10,9	4,7	*276*	25,6	64,7	9,7	*1080*
Hong Kong	32,1	5,7	62,1	*140*	42,2	24,4	33,3	*45*
India	76,2	13,6	10,2	*1050*	72,9	14,5	12,6	*371*
Iraq	59,8	16,9	23,3	*769*	88,3	3,3	8,5	*213*
Iran	65,4	17,4	17,2	*1562*	76,5	13,4	10,1	*701*
Israel	12,1	59,3	28,6	*91*	4,8	73,8	21,4	*42*
China	78,5	5,7	15,8	*368*	47,4	28,9	23,7	*308*
Lebanon	56,5	22,1	21,4	*285*	47,4	29,5	23,2	*95*
Pakistan	90,9	4,4	4,7	*2830*	97,4	1,0	1,6	*956*
Syria	55,4	15,2	29,3	*92*	42,9	10,2	46,9	*49*
Thailand	56,3	29,2	14,6	*48*	3,9	83,7	12,4	*669*
Turkey	79,3	15,9	4,8	*1706*	91,4	4,7	3,9	*790*
Vietnam	94,4	2,8	2,8	*2010*	89,0	6,9	4,1	*1330*
The Americas								
Dominican Republic	40,0	20,0	40,0	*15*	19,4	48,4	32,3	*62*
Mexico	11,5	65,4	23,1	*26*	2,9	65,7	31,4	*35*
Argentina	12,1	54,5	33,3	*33*	15,4	65,4	19,2	*26*
Brazil	33,3	42,4	24,2	*33*	3,4	80,8	15,8	*146*
Chile	54,7	32,1	13,3	*739*	57,5	28,1	14,4	*583*
Colombia	39,4	42,4	18,2	*33*	22,2	55,6	22,2	*54*
Peru	27,7	44,6	27,7	*65*	21,2	60,6	18,2	*66*
Canada	10,6	76,6	12,8	*94*	6,1	85,4	8,5	*82*
USA	12,9	70,5	16,6	*529*	7,7	80,3	12,1	*614*
Oceania								
Australia	6,2	69,2	24,6	*65*	3,8	79,2	17,0	*53*
New Zealand	5,6	55,6	38,9	*18*	0,0	89,5	10,5	*19*
Mean Percentage / *N*	42,0	37,9	20,2	*29024*	36,4	44,7	18,9	*20860*

Groups selected have $n > 80$, or represent low-n regions (Central/South America and Oceania).

Some groups (e.g. Sweden, USA, etc.) display very high rates of intermarriage with someone from the Norwegian majority. Other groups have very few members that marry outside of their national-origin group, with close to (Somalia, Iraqi and Vietnamese women) and above 90% endogamy (Sri Lanka, Pakistan, Vietnamese men, Turkish women). Although men are slightly more endogamous than women overall, differences between sexes vary greatly

between groups. While women from Thailand and the Philippines are unusually inclined to marry majority Norwegians, their male co-nationals are largely endogamous. Although no groups display considerable male and little female exogamy, at the other end of the spectrum are Iraq (3% of women and 17% of men are married to a majority Norwegian), Algeria and Tunisia (men are twice as exogamous).

5.1.2 Descendants

Table 5.2 presents intermarriage percentage distributions for descendants of thirteen national-origin groups, separately for men and women. The average percentages show that unlike immigrants, men are more majority exogamous (48%) than women (37%) among descendants. The minority exogamy rates are very similar, and thus women (51%) are significantly more endogamous than men (40%). Note that the sex ratio is reversed from that seen for immigrants; among descendants, women outnumber men three-to-two.

Table 5.2 Intermarriage Percentages by Country of Origin, Descendants in Norway as of 31.12.2002.

	MEN				WOMEN			
Country of origin	% Within Group	% With Majority	% With Other Group	*N*	% Within Group	% With Majority	% With Other Group	*N*
Denmark	6,8	78,8	14,4	*264*	5,6	85,7	8,7	*287*
Sweden	2,7	82,2	15,1	*73*	1,9	81,0	17,1	*105*
Serbia and Montenegro	20,0	52,0	28,0	*25*	35,1	38,6	26,3	*57*
Netherlands	11,4	72,7	15,9	*44*	9,1	70,5	20,5	*44*
Great Britain	4,7	81,3	14,1	*64*	5,8	75,4	18,8	*69*
Turkey	91,7	4,5	3,8	*157*	92,3	4,2	3,5	*259*
Germany	1,8	77,2	21,1	*57*	7,4	77,8	14,8	*81*
Hungary	5,6	74,4	20,0	*90*	0,9	84,4	14,7	*109*
Morocco	79,3	10,3	10,3	*29*	93,5	3,9	2,6	*77*
India	89,2	6,8	4,1	*74*	63,7	21,2	15,0	*113*
Pakistan	90,3	2,4	7,3	*545*	95,9	1,2	2,9	*729*
Vietnam	95,1	0,0	4,9	*41*	75,6	12,8	11,5	*78*
USA	15,2	81,8	3,0	*33*	8,3	85,0	6,7	*60*
Mean Percentage / *N*	39,5	48,0	12,5	*1496*	51,4	36,8	11,8	*2068*

Groups selected have n > 80.

The visible variation in intermarriage percentages by descendants' national origin is stunning, as differences between groups are more tangible than that seen for immigrants. While some of the Nordic and Western European descendants display a sizable increase in intermarriage between the generations (around ten percentage points more majority exogamy), the Asian groups are generally at the same level or even showing less intermarriage (Turkey, Morocco, Indian men) than immigrants of the same national-origin group. The closest thing to a fairly balanced distribution on the three outcomes is represented by Serbia and Montenegro – the unusually high minority exogamy shares perhaps an inclusion of other post-Yugoslavian backgrounds into the "field of eligibles".

Among the most conspicuous differences between the sexes is the fact that *no* male Vietnamese descendant but 13% of women have found a spouse within the majority population. Men from Serbia and Montenegro are much more likely to marry out than women, but they are equally likely to intermarry with another of immigrant background. Indian male descendants are also much less exogamous than their female peers, while the opposite is true for Moroccans.

5.2 Spouse import

5.2.1 Immigrants

Table 5.3 displays spouse import percentages for the endogamous, by thirty-three national-origin groups. We see that on average, 57% of endogamous men and 29% of endogamous women in these groups import a spouse from their country of origin.[45] Again, the differences by national-origin and regional background are substantial, and we see that the pattern largely matches that seen in the intermarriage analyses. However, across all subpopulations, men are *considerably* more prone to import a spouse than women.

[45] Percentages are not directly comparable to those shown in chapter two (from Daugstad 2008 and Henriksen 2010), because they report the shares of spouse import out of the total amount of marriages entered, not only those of the endogamous.

Table 5.3 Import Percentages by Country of Origin, Endogamous Immigrants in Norway as of 31.12.2002.

Region and country of origin	MEN			WOMEN		
	% Norwegian Resident	% Spouse Import	*N*	% With Norwegian Resident	% Spouse Import	*N*
Western Europe						
Denmark	85,4	14,6	*329*	90,2	9,8	*326*
Finland	77,1	22,9	*118*	84,2	15,8	*114*
Iceland	85,2	14,8	*155*	80,4	19,6	*163*
Sweden	85,7	14,3	*301*	93,0	7,0	*286*
Great Britain	40,9	59,1	*176*	83,3	16,7	*84*
Germany	64,6	35,4	*113*	81,3	18,8	*96*
Netherlands	68,5	31,5	*89*	90,8	9,2	*65*
Eastern Europe						
Poland	42,4	57,6	*231*	68,8	31,3	*144*
Croatia	40,5	59,5	*74*	61,2	38,8	*49*
Serbia and Montenegro	35,5	64,5	*560*	68,4	31,6	*291*
Bosnia-Hercegovina	65,1	34,9	*482*	78,9	21,1	*398*
Macedonia	13,7	86,3	*161*	33,8	66,2	*65*
Africa						
Algeria	18,2	81,8	*88*	88,9	11,1	*18*
Eritrea	44,6	55,4	*177*	90,8	9,2	*87*
Ethiopia	55,5	44,5	*128*	80,7	19,3	*88*
Gambia	32,6	67,4	*129*	73,7	26,3	*57*
Ghana	26,9	73,1	*193*	68,4	31,6	*76*
Morocco	16,0	84,0	*737*	36,0	64,0	*328*
Nigeria	22,4	77,6	*67*	71,4	28,6	*21*
Somalia	58,6	41,4	*466*	88,1	11,9	*310*
Tunisia	7,5	92,5	*80*	66,7	33,3	*9*
Asia						
Sri Lanka	30,1	69,9	*1856*	78,0	22,0	*715*
Philippines	59,7	40,3	*233*	50,4	49,6	*276*
India	15,8	84,2	*784*	38,2	61,8	*297*
Iraq	30,0	70,0	*460*	73,4	26,6	*188*
Iran	46,6	53,4	*1022*	88,8	11,2	*536*
China	37,0	63,0	*289*	72,6	27,4	*146*
Lebanon	22,4	77,6	*161*	80,0	20,0	*45*
Pakistan	14,8	85,2	*2577*	27,2	72,8	*961*
Turkey	17,8	82,2	*1343*	27,1	72,9	*720*
Vietnam	55,8	44,2	*1937*	88,5	11,5	*1221*
Other						
USA	42,6	57,4	*68*	72,3	27,7	*47*
Chile	64,1	35,9	*404*	77,3	22,7	*335*
Mean Percentage / *N*	43,1	56,9	*15988*	71,3	28,7	*8562*

Groups selected have n > 80, except USA.

The gradient pattern of spouse import matches the gradient decrease in intermarriage. While Western Europeans on average display low rates of spouse import, their internal variation is peculiar, with Great Britain as an outlier of almost 60% spouse import among endogamous men (a characteristic shared with men from the USA). However, compared to Western Europeans on average, Eastern Europeans are more than twice as likely to import a spouse to Norway, and close to three times as likely among women. Next, the average spouse import percentages of African and Asian men are similar at just beneath 70%, while Asian women are more likely to import than African women.

Import percentages standing out among both sexes of the immigrant groups displayed here are those of Pakistan, Turkey, India, Morocco and Macedonia (a deviant case among the Eastern European group). As a group, the Philippines remarkably have ten percentage points more importers among the women than among the men. Given the skewed sex ratio of almost 4:1 female Filipinos in Norway, there is probably an opportunity-driven logic explaining that these women import relatively more than their peers from other national-origin groups.

5.2.2 Descendants

Table 5.4 shows import percentages for descendants. Few of the national-origin groups have large enough stocks of endogamously married individuals to include them in the bivariate analyses. Reduced to five large "non-western" groups, we see that an overall variation no longer stands out. The top four groups share a pattern of large shares of the endogamous marriages (and because these groups are largely endogamous, all marriages) being covered by spouse import. Vietnam displays a different and a bit more complicated story. In fact, Vietnamese men actually display fair amounts of import at this point, quite similar to the mean of immigrant men seen above. However, Vietnamese female descendants who marry endogamously tend to find the spouse in Norway.

Compared to their parental generation, these five groups of descendants are generally just as (or more) likely to import a spouse. The major difference between the generations is that the gap between men and women in their propensity to import is almost closed, except in the case of the Vietnamese, for whom the difference between men and women is at the level seen by immigrants. Given the reversal of the numerical balance between the sexes from

immigrants to descendants (probably generated by the fact that women marry earlier at average than men), we can interpret this as further support of the idea that the ratio of men to women among immigrants marrying in Norway can account for some of the general spouse selection variation between the sexes. In general, however, we see that the gender pattern is more balanced than for immigrants, which corroborates previous research (Daugstad 2008: 51).

Table 5.4 Import Percentages by Country of Origin, Endogamous Descendants in Norway as of 31.12.2002.

	MEN			WOMEN		
Country of origin	% With Norwegian Resident	% Spouse Import	*N*	% With Norwegian Resident	% Spouse Import	*N*
Turkey	18,1	81,9	*144*	19,2	80,8	*239*
Morocco	13,0	87,0	*23*	18,1	81,9	*72*
India	9,1	90,9	*66*	20,8	79,2	*72*
Pakistan	20,7	79,3	*492*	21,3	78,7	*699*
Vietnam	48,7	51,3	*39*	81,4	18,6	*59*
Mean Percentage / N	21,9	78,1	*764*	32,2	67,8	*1141*

Groups selected have n > 80.

5.3 Descriptive statistics

We have seen the distributions of spouse selection rates according to national-origin group, generation and gender. Table 5.5 displays descriptive statistics of the explanatory variables utilized in the next two chapters, by gender and generation. Thus, both differences between men and women, and differences between immigrants and descendants are in focus. Table 5.6 displays descriptive statistics on the same explanatory variables for the five large national-origin groups scrutinized separately in the analyses.

There seems to be a cohort selection of descendants in my data. Close to 20% of both male and female descendants have only primary education at marriage, and almost 50% of them did not complete secondary education before marrying. Partly, this is mirrored by a relatively low mean marital age. However, the rate at which descendants (6%) are missing information of education is very low compared to that of immigrants (above 30%) – and there is reason to believe that the proportion of lowly educated among this group is relatively high.

Table 5.5 Descriptive statistics by gender and generation. Percentages, means and dispersions.

Variable	Immigrants		Descendants	
	Men	**Women**	**Men**	**Women**
Educational level				
Primary education	9,6	9,7	17,8	18,3
Lower-level secondary education	20,3	15,9	28,4	30,1
Higher-level secondary education	16,3	15,7	30,0	26,3
Lower-level tertiary education	13,6	15,8	12,5	14,8
Higher-level tertiary education	4,8	4,2	4,2	1,8
Missing	32,0	33,2	6,0	6,2
Age at marriage				
Mean	31,6	29,3	26,1	24,1
Standard Deviance	7,1	6,6	5,7	5,7
Length of stay				
Mean	7,6	6,6		
Standard Deviance	5,6	5,3		
Residence				
Oslo	27,3	26,3	37,4	36,5
Outside Oslo	42,6	47,7	43,2	41,9
Missing	30,1	26,0	19,3	21,6
N	*29,680*	*21,292*	*1,825*	*2,496*

Both immigrant and descendant men marry about two years later than their female peers at average, and immigrants have married five years later on average than descendants. When it comes to residence before marriage, a larger proportion of married descendants at the end of 2002 were living in Oslo, than the corresponding proportion of immigrants. However, again we see that immigrants display higher missing information rates of residential location as well – and it is not a far stretch to presume that more of these individuals live in Oslo than not.

Looking to the descriptive statistics of my five selected national-origin groups (Table 5.6), we see that Indians have considerably higher levels of educational levels than all other groups, among both men and women. Morocco, Turkey and Pakistan all display low levels of education across the sexes, and high rates of missing information about education. Although few Vietnamese in my material have higher education, both men and women are clustered around the secondary levels – and have distinctly the lowest rates of missing information of these groups.

Moroccan men marry later than those from the other groups, while Indian women marry on average at the same age as Indian and Vietnamese women. Women from Pakistan and Turkey marry at a very young age, which is probably influenced by their relatively large stocks of descendants with disproportionately low marital age.

Table 5.6 Descriptive statistics of independent variables, 5 national-origin groups.*

	Men					Women				
Variable	**Pakistan**	**Turkey**	**India**	**Morocco**	**Vietnam**	**Pakistan**	**Turkey**	**India**	**Morocco**	**Vietnam**
Educational level										
Primary education	18,5	22,9	8,8	15,9	10,6	22,9	28,5	11,0	24,9	16,5
Lower-level secondary	24,7	21,2	27,9	21,0	40,3	27,0	24,8	21,7	18,8	27,9
Higher-level secondary	12,3	12,3	15,5	12,3	24,5	16,0	9,0	21,1	10,3	23,5
Lower-level tertiary education	6,7	5,6	18,4	12,8	8,8	4,9	3,1	19,8	4,2	8,0
Higher-level tertiary education	1,0	1,7	4,3	1,9	2,8	0,6	1,4	3,1	0,0	1,7
Missing	34,5	32,5	23,8	32,2	10,7	25,0	27,4	20,0	36,9	17,3
Age at marriage										
Mean	27,3	27,1	29,9	32,1	30,6	23,5	22,8	26,9	26,8	27,2
Standard Deviance	7,1	7,5	6,7	6,6	6,7	5,4	6,1	6,3	7,7	6,4
Length of stay										
Mean	10,9	8,5	8,8	8,7	10,8	13,4	9,8	11,0	9,3	8,9
Standard Deviance	7,2	6,1	6,5	5,6	5,2	7,3	6,4	7,7	6,6	5,7
Residence										
Oslo	36,3	24,3	26,2	44,4	21,5	56,5	27,3	34,3	59,6	24,7
Outside Oslo	12,9	38,2	26,4	24,6	53,9	18,4	44,4	32,0	15,3	49,9
Missing	50,7	37,5	47,3	31,0	24,6	25,2	28,3	33,7	25,1	25,4
N	*3,375*	*1,863*	*1,124*	*1,223*	*2,051*	*1,705*	*1,049*	*484*	*426*	*1,372*

*All values pertain to the sum of immigrants and descendants, except length of stay (which is shown only for immigrants).

Moroccans and Pakistanis live in Oslo to a larger extent than the other groups, while Pakistani and Indian men display very high rates of missing information on place of residence. Lastly, I would like to highlight again the skewed sex ratio here, ranging from Moroccans for which men outnumber women three-to-one, to Turks for which the ratio is closer to three-to-two.

5.4 Summary

This chapter reports the distributions of national-origin groups in intermarriage, endogamy and spouse import. The intermarriage tables show that for *immigrants*, more women than

men intermarry with the majority population, while more men than women intermarry with others of minority background. The national-origin groups of Western Europe and North America are on average much more exogamous than those from other regions, and while Asian groups display the lowest mean intermarriage rate, this is particularly true for groups from the Middle Eastern and South Asia areas. For *descendants*, more men than women intermarry both with the majority population and with other minorities. With a few exceptions, within-group differences between men and women are smaller than among immigrants. However, differences between national-origin groups are larger than that seen for immigrants. Descendants from the Nordic and Western Europe are intermarrying at remarkably high rates, while those from South Asia and the Middle East are highly endogamous.

The spouse import tables make it clear that above all, men import much more than women. This tendency holds across the generations, and matches the skewed sex ratio in my data (excluding all individuals married before having lived in Norway for one year). Among *immigrants*, those from African and Asian countries are most likely to import, while Western Europeans are most likely to find their national-origin match within Norway's borders. Four out of five national groups displaying large groups of endogamous descendants show high rates of spouse import, with Vietnam as an outlier displaying only a moderate degree.

Overall, the patterns found in this chapter are roughly similar to those found in previous Norwegian research (Lie 2004; Daugstad 2008; Daugstad 2009; Henriksen 2010), although we have seen that my data selection strategy does change the degree to which some groups are deemed exogamous and endogamous. The next two chapters focus on describing these spouse selection patterns more accurately, by including other characteristics than national origin in the analyses. First, I scrutinize which factors influence the intermarriage rates.

6. Intermarriage and its correlates

This chapter presents multivariate analyses of how education, generation, gender, place of residence, years since migration and marital age influences the chances of intermarriage. The inception is an analysis in which the whole population is investigated, with differences across national-origin groups of all other independent variables. Next, four sets of analyses demonstrate separately the effect of the other independent variables for immigrant and descendant men and women, controlling for national-origin group variation. Finally, separate analyses of the largest national-origin groups are presented.[46]

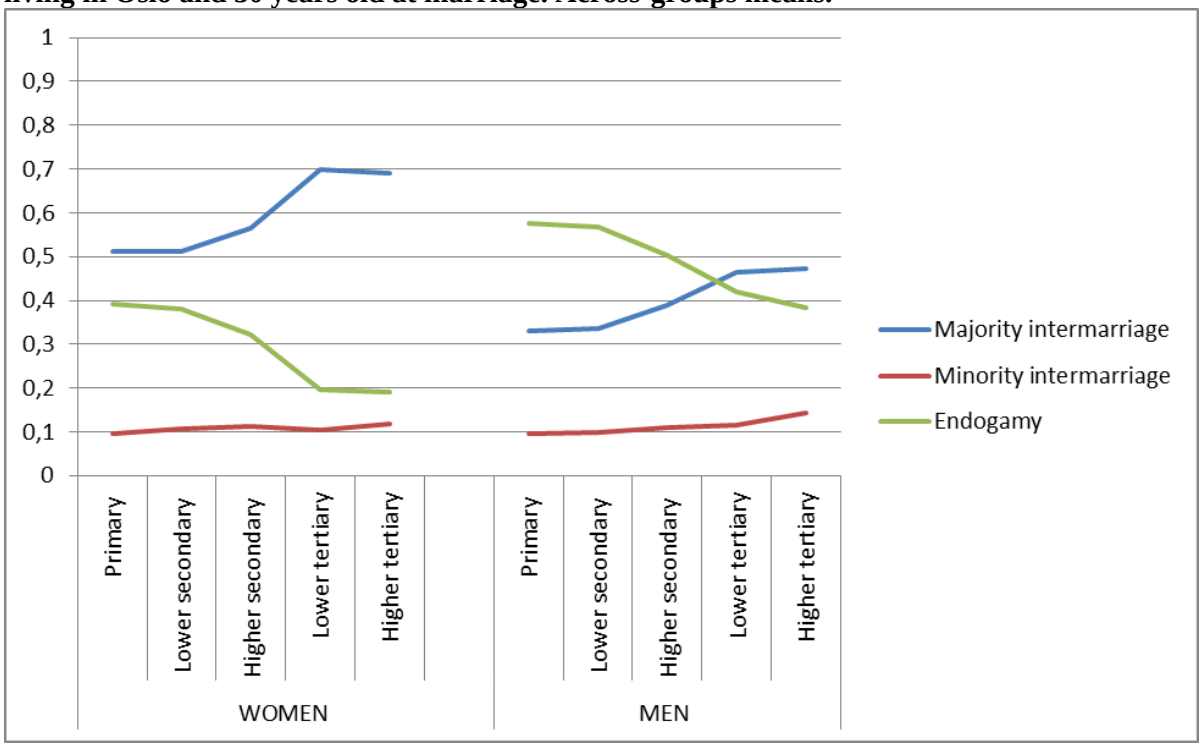
6.1 Effects across all groups

To establish the impact of all independent variables across all groups in the immigrant population, I first ran analyses of effects across all national-origin groups for both generations and both sexes. These analyses were modeled on a design followed by several researchers (e.g. Van Tubergen and Maas 2007; Celikaksoy et al. 2009; Kalmijn and Van Tubergen 2010), attempting to explain the intermarriage patterns of immigrants as one group. A table reporting the logit estimates of these analyses is included in Appendix A, and some of the results are shown in Figures 6.1 through 6.4.

[46] All regressions have been run in several steps, with increased inclusion of possibly confounding factors. I have chosen to present the models including all my independent variables here. Models estimating effects excluding the impact of age at marriage are found in Appendix C.

Figure 6.1 shows graphs for the probability of intermarriage by education and gender, and illustrates both the mean differences between men and women across all groups, and the mean differences in the impact of educational level on their propensities to intermarry. The first thing to notice is the conspicuous influence of educational level. It is unequivocally gradient, and although most visibly affecting the probability of majority intermarriage and endogamy, it is statistically significant in all models at all levels of education.

Figure 6.1
Predicted probability of intermarriage by education and gender. Calculated for immigrants living in Oslo and 30 years old at marriage. Across-groups means.



The graph tells us that that immigrant women's probability of majority intermarriage increases from 51% to 70% from the lowest to the highest educational level, while that of immigrant men is correspondingly changed from 32% to 47%. The rising slopes thus display that women are more affected by level of education than men, a relationship which was shown to be statistically significant at the two higher educational levels for majority intermarriage (see Table A6.1 in Appendix A). The strength of association between educational level and intermarriage in Figure 6.1 is considerably lower than that shown in Figure 6.2, showing the plot without control for age at marriage. Here, the change in probability of majority intermarriage is from 38% to 66% for women and from 26% to 43% for men, and we also see that the influence of educational level on minority exogamy is larger.

As shown in Chapter 5, men are thus overall less likely to be majority exogamous than women, an effect also partly confounded by marital age. Because men tend to marry a bit later in life than women, and age at marriage is positively associated with intermarriage of both types, holding marital age constant increases the differences between the sexes as to whether they marry outside of their group. Thus, the variance between men and women shown in Figure 6.1 is larger than that seen in Figure 6.2.

Figure 6.2
Predicted probability of intermarriage by education and gender. Calculated for immigrants living in Oslo. Across-groups means.

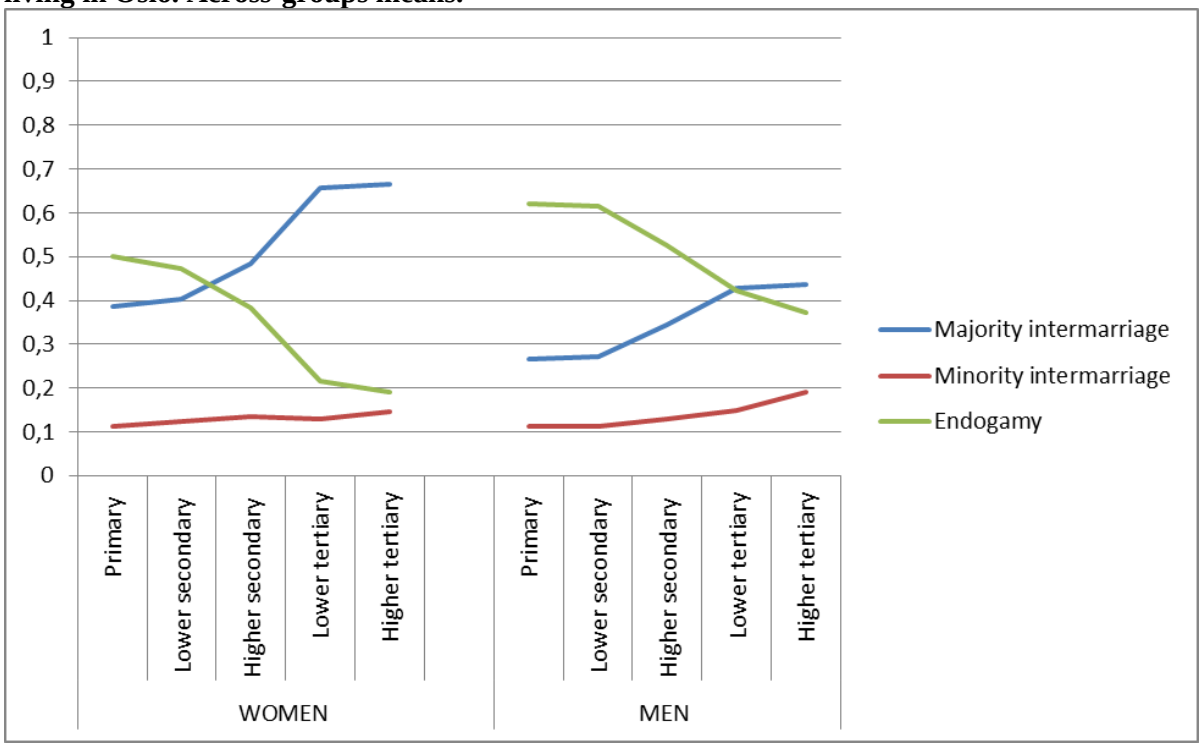
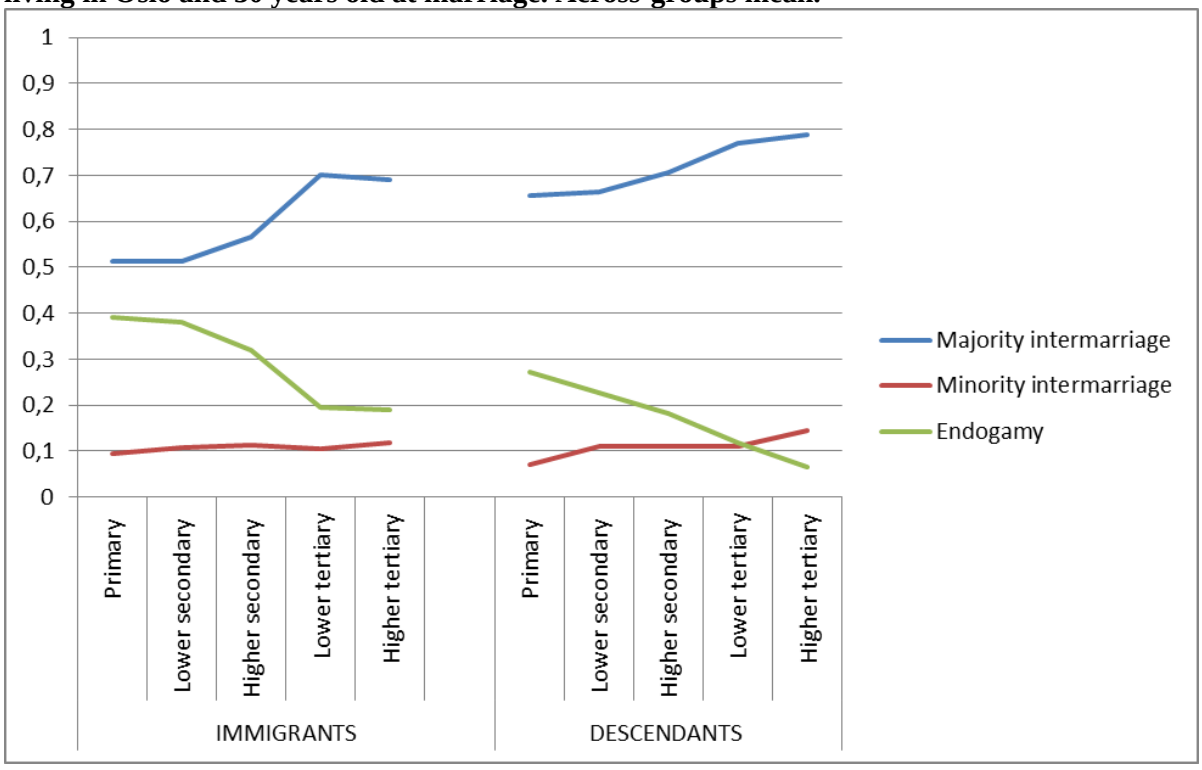


Figure 6.3 shows graphs for the probability of intermarriage by education and generation, and was generated from the same regression as Figure 6.1. Descendants are shown to be more prone to intermarriage with majority Norwegians than immigrants at all educational levels. This contrasts with the finding of Chapter 5, and tells us that descendants' low age at marriage seems to account for the perceived lower intermarriage rates shown there. We also see that for descendants, educational level is more important than for immigrants in increasing intermarriage rates, and the association is statistically significant at all four levels of education for majority exogamy, and at the three highest levels for minority exogamy.

As was the case with gender, the magnitude of the differences both between immigrants and descendants and in the association between educational level and intermarriage for the two

groups are significantly reduced with control for marital age. As shown by Figure 6.4, all slopes are steeper, but the general differences between immigrants and descendants are smaller than that seen among 30-year olds only. The most conspicuous change from the model controlling for age is the enormous influence of higher educational levels on the probability of majority intermarriage for descendants.

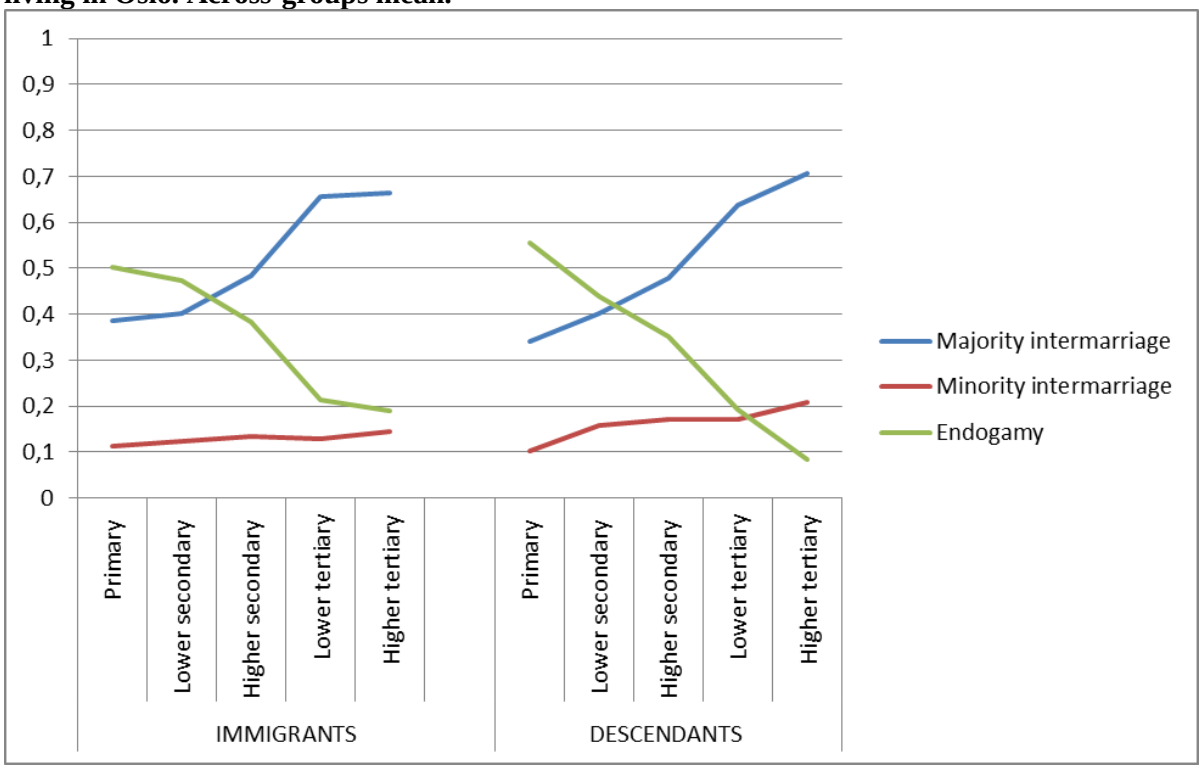
Figure 6.3
Predicted probability of intermarriage by education and generation. Calculated for women living in Oslo and 30 years old at marriage. Across-groups mean.



We have seen evidence that any account of educational level's impact on intermarriage should include control of age at marriage, which would indicate that this association has been misestimated in some previous research (Jacobs and Labov 2002; Gonzalez-Ferrer 2006; Kalmijn and Van Tubergen 2006). However, the across-group estimates seen here can be dissected further by controlling for the national-origin group variation in the utilized independent variables. Previous research relying on models of the type shown in this section (e.g. Van Tubergen and Maas 2007; Celikaksoy et al. 2009; Kalmijn and Van Tubergen 2010) seems to assume that the impact of individual-level variables are independent of national-origin group. To evaluate this assumption, the strength of estimates should be assessed both controlling for national-group variation in the independent variables, and the

influence of these independent variables should be evaluated for national-origin groups in separate analyses. This task is undertaken in this chapter, with a focus on educational level.

Figure 6.4
Predicted probability of intermarriage by education and generation. Calculated for women living in Oslo. Across-groups mean.



Thus, the next task of my investigation is to decompose the patterns viewed here in two steps: first, I run models comprising all independent variables *including* national-origin group for immigrants and descendants separately, second, I fit the same independent variables used in the across-groups estimates of this section for separate national origin groups.

6.2 Immigrants

Table 6.1 presents two sets of multinomial regression analyses of intermarriage, in separate models for immigrant men and women. The analyses include five sets of independent variables, estimating the impact of national/regional group, educational level, place of residence, years since migration and age at marriage. Both models are based on a high number of observations. The model fit (Nagelkerke R^2) is fairly high, largely caused by the inclusion of national/regional origin.[47] Functioning as intercept term are South Americans with primary education living outside of Oslo, with between one and two years stay before marrying.

It is obvious that national-origin group accounts for much of the variation in intermarriage within the immigrant population. Although the scale of these logit differences between groups cannot be compared to the percentages in table 5.1, some remarks should be made. The least exogamous groups remain Pakistani women and Vietnamese men, followed by the other sexes of both origin groups and Turkish women. Most likely to marry exogamously (of both types) are those from North America and Oceania (both sexes).

The influence of educational level is weakly gradient and positive, with the exception of a slight reduction from lower to higher tertiary education on the chances of marrying majority Norwegians for men. Obviously, the magnitude of the effects is visibly less pronounced then that seen in the previous section (logits ranging from 0.1 to 0.4). This is clearly linked to national-group variation in educational level. Comparing Figure 6.5 with Figure 6.1 illustrates this: showing the average association between educational level and intermarriage among immigrants controlled for national-origin group variation in educational level (and other independent variables), Figure 6.5 demonstrates that the average within-group association between level of education and intermarriage is much lower than that indicated in the previous section.

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[47] Another model fitted in Appendix F (Table F6.4) excludes national-origin as variable, and displays a correspondingly low Nagelkerke R^2 of .106 and .139.

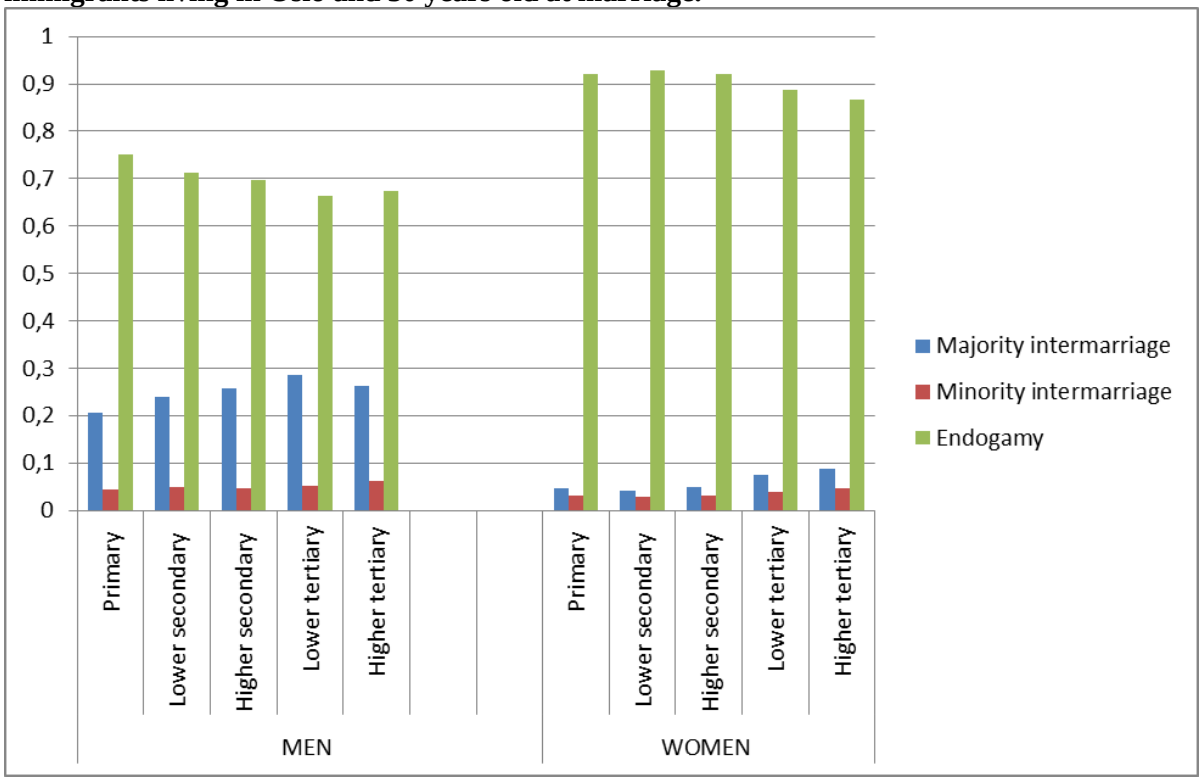
Table 6.1 Multinomial logit estimates of majority and minority intermarriage vs. endogamy. Immigrants.

	Men				Women			
	Majority		Minority		Majority		Minority	
National/regional group								
South America (Ref.)								
Pakistan	-2,469	***	-1,902	***	-4,576	***	-3,971	***
Turkey	-1,125	***	-1,539	***	-2,563	***	-2,000	***
Vietnam	-3,349	***	-2,450	***	-2,582	***	-2,231	***
India	-1,393	***	-0,818	***	-1,850	***	-1,027	***
Other Asian	-1,535	***	-0,421	***	-0,125	ns	-0,340	**
Morocco	-0,262	**	-0,984	***	-1,512	***	-0,711	**
Other African	-0,288	**	0,032	ns	-0,853	***	-0,012	ns
Nordic countries	1,435	***	0,709	***	1,453	***	0,740	***
Western Europe	1,832	***	1,428	***	1,586	***	1,314	***
Eastern Europe	-0,394	***	0,024	ns	0,518	***	0,490	***
North America and Oceania	2,034	***	1,527	***	2,376	***	1,800	***
Educational level								
Primary (Ref.)								
Lower secondary	0,146	(*)	0,174	*	-0,121	ns	-0,101	ns
Higher secondary	0,208	**	0,142	(*)	-0,036	ns	-0,059	ns
Lower tertiary (BA)	0,387	***	0,266	***	0,314	***	0,152	(*)
Higher tertiary (MA)	0,321	***	0,440	***	0,394	**	0,346	**
Unknown	-0,052	ns	0,164	*	-0,130	(*)	-0,033	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo	-0,280	***	0,078	(*)	-0,513	***	0,168	**
Unknown	-0,555	***	-0,170	**	-0,043	ns	-0,048	ns
Length of stay								
1-2 years (Ref.)								
3-5 years	0,010	ns	-0,092	ns	0,019	ns	0,067	ns
6-9 years	-0,223	***	-0,146	*	-0,029	ns	0,097	ns
10-15 years	-0,172	**	-0,091	ns	0,187	**	0,435	***
16-42 years	0,127	ns	0,323	***	0,717	***	0,891	***
Age at marriage	0,017	***	0,010	*	0,051	***	0,013	**
Age at marriage^2	-0,006	***	0,000	*	-0,006	***	-0,001	**
Intercept	0,160	*	-1,284	***	0,273	**	-1,170	***
Chi-square (*df*)	10188,204 (46)***				8705,799 (46)***			
Nagelkerke R^2	0,377				0,383			
N	*29,680*				*21,292*			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

The probability of intermarriage increases by 4% from the lowest to the highest educational level for women, and correspondingly by 6% for men. Educational level thus has slightly more impact on minority exogamy for men than for women, and the gap between those with higher and lower education regarding the chances of marrying a majority Norwegian is larger for women than for men. However, the big picture emanating from Figure 6.5 is that of unexpected continuity across educational levels. Another calculation of probabilities (not shown here) displays that the average association between educational level and intermarriage is not significantly confounded by age at marriage for immigrants of either sex (the difference remains 4% and 6%).

Figure 6.5
Predicted probability of intermarriage by educational level. Calculated for Turkish immigrants living in Oslo and 30 years old at marriage.



Turning back to Table 6.1, the coefficient for age at marriage is positive and significant for all four outcomes, while slightly higher for women than for men in the case of majority exogamy. All effects of age at marriage except that for men's minority exogamy are curvilinear, meaning that the relationship is decreasing by age and eventually changes direction (making those marrying at old age less likely to intermarry).

A brief comment about the control variables is in order. Both male and female immigrants living in Oslo are less likely to intermarry with someone from the majority population than those living outside Oslo, but when it comes to minority mixing, living in Oslo slightly increases the chances of it occurring (and most clearly so for women). Men marrying after more than six years of residence in Norway are actually less likely to marry exogamously, but at sixteen years of residency majority exogamy and endogamy are equally likely, while minority exogamy has become more likely. For women, having stayed more than ten years before matrimony increases the chances of intermarriage, and this association is elevated strongly for the group residing at least 16 years before marriage.

6.3 Descendants

Table 6.2 fits two models identical with those of Table 6.1, except that the analyses are run for descendants only. Unlike the immigrant models, however, a relatively low number of observations characterize the descendant groups, making the threshold for statistical significance higher. The Nagelkerke R^2 is comparably high in both models (around 70%).

The national-origin differences in intermarriage are generally more at variance than those between immigrant groups, the most extreme example of which is Vietnamese men (zero majority exogamous spouse choices) and Pakistani women (only a handful of which are married to majority Norwegian men). For many groups, however, there are no significant differences from the reference group of South Americans. Among women, only the five particular national-origin groups singled out in this study – Pakistani, Turkish, Indian, Vietnamese and Moroccans (plus other Asians in the majority exogamy column) – display statistically different chances of intermarriage from that of South Americans.

Although the magnitude of educational level effects is largely at or even sometimes above the strength of those reviewed in the immigrant analyses, few of them are statistically significant. Also, the direction and tendency of educational level is not clear cut. For female descendants, having a lower tertiary degree increases the chances of being majority exogamous, while higher secondary level increases the chances of mixing with other descendant groups.

Table 6.2 Multinomial logit estimates of majority and minority intermarriage vs. endogamy. Descendants.

	Men				Women			
	Majority		Minority		Majority		Minority	
National/regional group								
South America (Ref.)								
Pakistan	-3,016	***	-0,229	ns	-5,273	***	-3,705	***
Turkey	-2,513	***	-0,756	ns	-3,899	***	-3,176	***
Vietnam	-22,155	ns	-0,853	ns	-3,155	***	-2,253	**
India	-2,666	***	-1,068	ns	-2,692	***	-1,948	**
Other Asian	0,373	ns	2,120	(*)	-1,295	*	-0,419	ns
Morocco	-1,216	ns	0,215	ns	-3,684	***	-3,636	***
Other African	-0,032	ns	2,204	(*)	0,224	ns	1,221	ns
Nordic countries	2,018	**	2,534	*	0,951	ns	0,570	ns
Western Europe	2,338	**	2,830	*	-0,102	ns	0,096	ns
Eastern Europe	1,008	ns	1,998	(*)	-0,694	ns	-0,182	ns
North America and Oceania	1,264	ns	-0,003	ns	0,835	ns	-0,082	ns
Educational level								
Primary (Ref.)								
Lower secondary	-0,331	ns	-0,016	ns	0,494	(*)	0,154	ns
Higher secondary	0,283	ns	0,191	ns	0,443	(*)	0,518	(*)
Lower tertiary (BA)	0,323	ns	0,382	ns	0,724	*	0,484	ns
Higher tertiary (MA)	0,015	ns	0,661	ns	0,254	ns	0,173	ns
Unknown	-0,814	(*)	0,077	ns	-0,748	(*)	-0,227	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo	-0,968	***	0,028	ns	-0,744	***	0,173	ns
Unknown	0,675	**	0,341	ns	1,316	***	0,728	**
Age at marriage	0,176	***	0,131	***	0,207	***	0,109	***
Age at marriage^2	-0,007	**	-0,005	(*)	-0,006	**	-0,002	ns
Intercept	0,420	ns	-1,977	(*)	1,360	*	0,116	ns
Chi-square (*df*)	1593,341 (40)***				2277,451 (40)***			
Nagelkerke R^2	0,684				0,712			
N	*1825*				*2496*			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Figure 6.6
Predicted probability of intermarriage by educational level. Calculated for Turkish descendants living in Oslo and 27 years old at marriage.

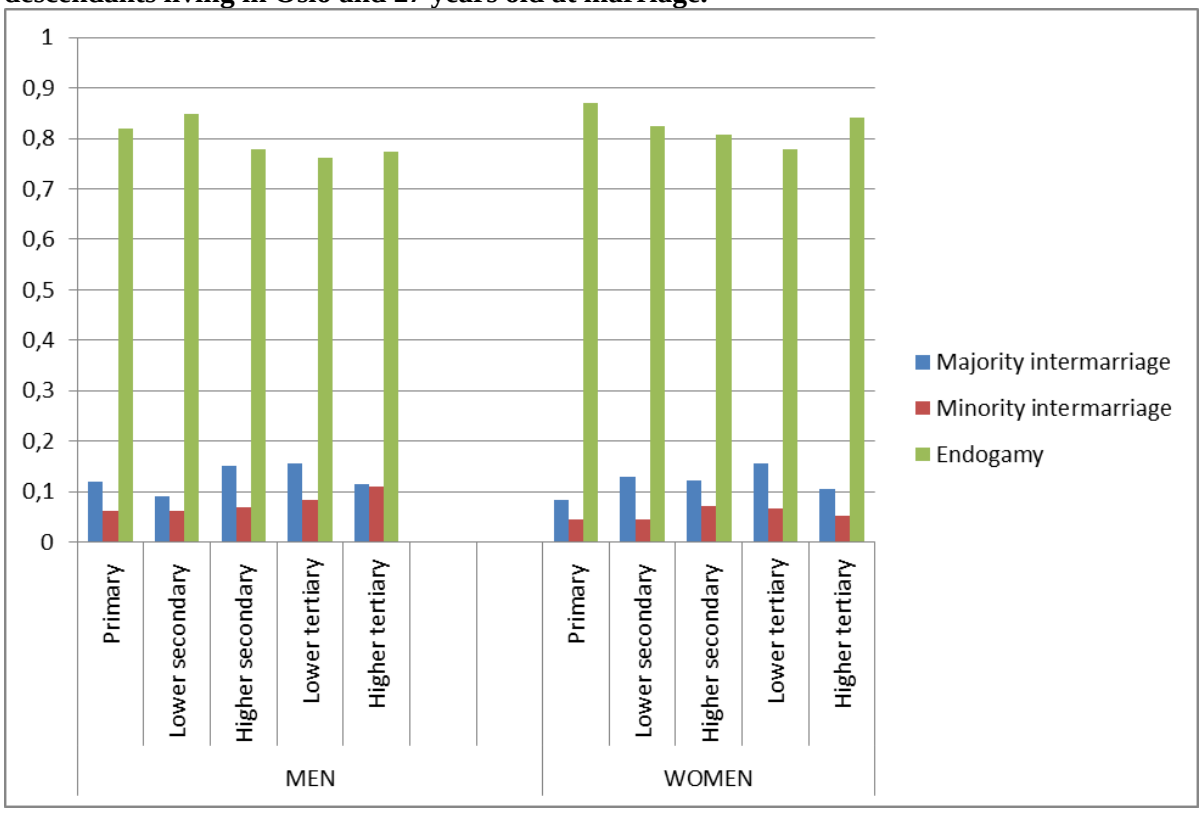


Figure 6.6 shows the average association between educational attainment and intermarriage probabilities for descendants, illustrated by the Turkish national-origin group. First, comparing Figures 6.5 and 6.6 shows that the differences in intermarriage probabilities between the generations of Turkish origin are small at all educational levels, with the highest difference at lower tertiary level for women (7% chance of majority intermarriage for immigrants, 15% chance for descendants).

Although endogamy is highly probable at all levels of education, there is a slight positive association with majority intermarriage shown until lower tertiary education (from 8 to 15% probability). Again, however, the overall interpretation of the pillars above is one of relative continuity: there is much less variation between the educational levels in terms of intermarriage probability than that expected from the results of the first section in this chapter. Opposed to the case of immigrants, this seems to be related to age at marriage. In the model run without this control, the probability of majority intermarriage increases from 3% at primary education to 13% at the highest educational level for Turkish female descendants (calculations based on Table A6.4 in Appendix A).

Although most coefficients for educational level (except BA degree for women's majority exogamy) are non-significant for descendants in the full model, the magnitude of this factor is thus slightly larger for descendants than immigrants, and particularly so in both the model without national-group control and that without age at marriage (see Appendix B). At the same time, we see that age at marriage has multiple times the effect on intermarriage for descendants compared to immigrants. All coefficients display a higher chance of intermarriage (and particularly majority exogamy) for those older than the mean at marriage, with the curvilinear term suggesting that there is a tipping point at which age at marriage promotes endogamy. One reason for this could be selection. As motioned above, the demographic selection of descendants in Norway as of 2002 is highly specific: a low percentage of this group has married, and those who have married are naturally younger and less educated than the expected mean of this generation.

Table 6.2 also tells us that the negative impact on the probability of majority intermarriage of Oslo-residency is higher for descendants than for immigrants. For both men and women the effect of residency on minority exogamy is negligible (as with immigrants), and statistically non-significant. [48]

6.4 Six national-origin groups

So far, the analyses have displayed estimates assuming that the differences in intermarriage probability according to all independent variables are constant across national-origin groups. To disclose some of the between-group variation in the influence of these variables, Table 6.3 exhibits results from six separate models of intermarriage influences for individuals from Pakistan, Vietnam, Turkey, India and Morocco and Denmark.[49]

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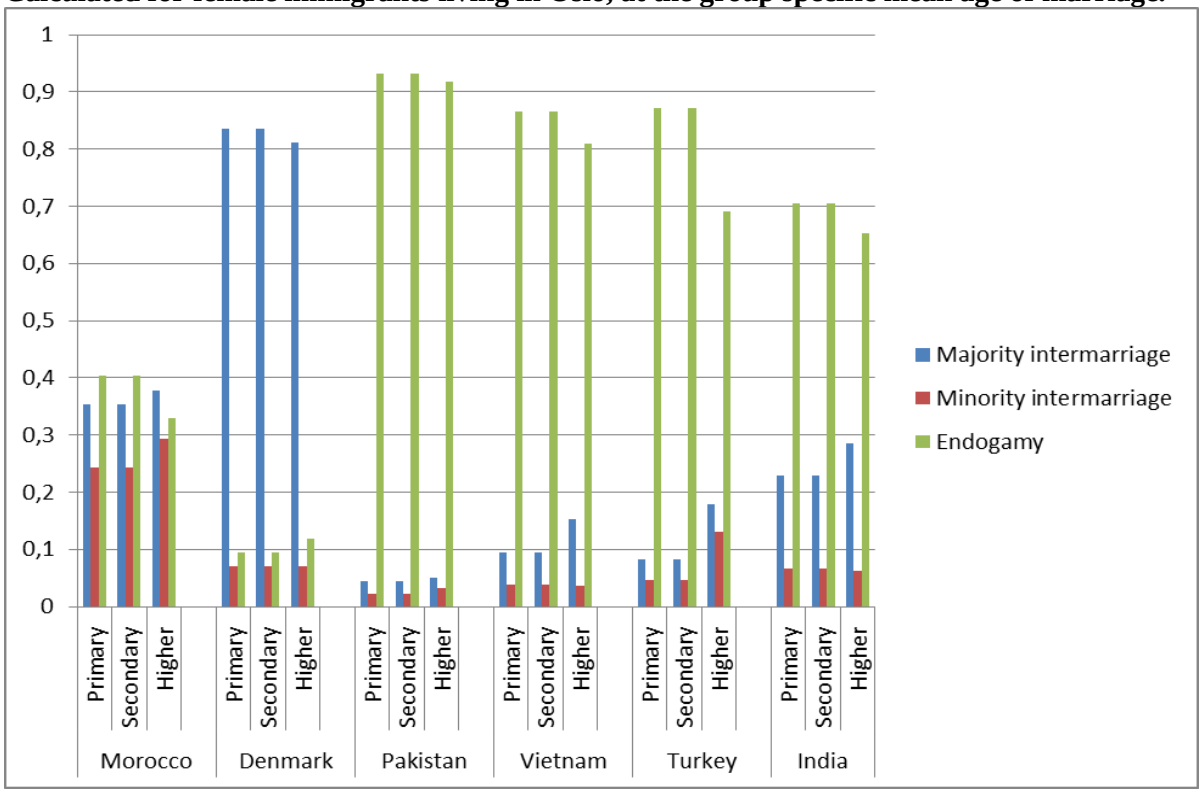
[48] The statistical significance of differences in the influence of educational level between both men and women, and descendants and immigrants, has been checked with interaction terms in a model not shown here (i.e. a model similar to that in A6.1 but controlling for national-origin group variation). The results show that estimates at all educational levels are significantly different at $p>0.05$ level or lower. However, among descendants, the impact of educational level differences on the probability of intermarriage was only significantly different between men and women at lower secondary level ($p>0.05$) and lower tertiary level ($p>0.1$) for majority intermarriage. Also, differences between generations when it comes to the probability of intermarriage were non-significant. SPSS outputs can be retrieved at request.

[49] As is seen in the table (next page), educational level is operationalized on three levels (plus missing) only, because of troubles with non-significance for some of the groups at the five-level definition. This points to the vulnerability of logistic regressions (and particularly multinomial versions) towards low-*N* samples.

Below, Figure 6.7 displays differences in the impact of educational level on the probability of intermarriage, illustrated by female immigrants. This confirms the suspicion that independent variables not only are heterogeneously distributed across national-origin groups, but their relative importance for intermarriage differs significantly as well.

Figure 6.7
Predicted probability of intermarriage by educational level for 6 national-origin groups. Calculated for female immigrants living in Oslo, at the group specific mean age of marriage.



Increase in educational attainment is associated with the likelihood of majority exogamy for female immigrants of all groups except Denmark. The relationship is, however, varying in strength between the groups: Vietnamese raise their predicted probability form 9 to 15%, the Turkish from 8 to 17%, and the Indians from 22 to 28% - while Pakistanis and Moroccans display only a slight increase from primary to higher educational level.

Table 6.3 Multinomial logit models of majority and minority intermarriage vs. endogamy. 5 national groups.

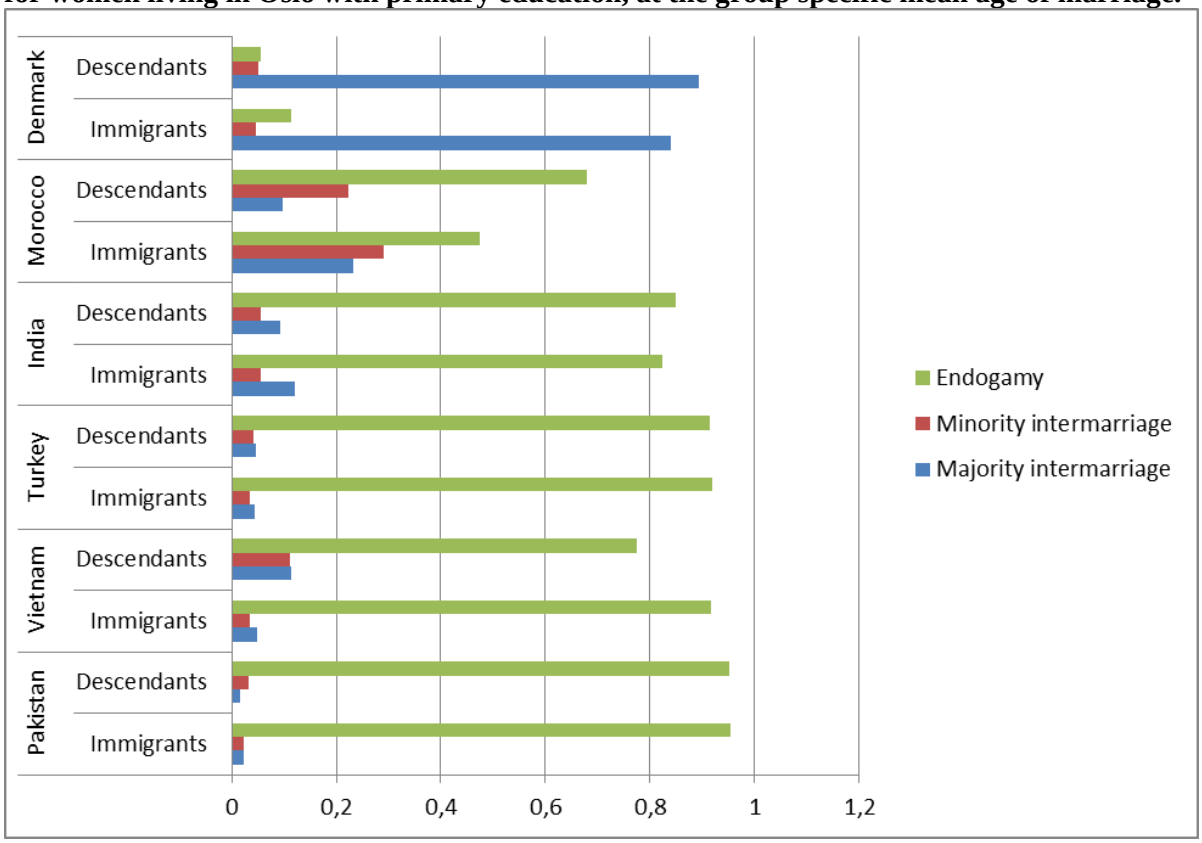
Model	Pakistan				Vietnam				Turkey				India				Morocco				Denmark			
	Majority		Minority		Majority		Minority		Majority		Minority		Majority		Minority		Majority		Minority		Majority		Minority	
Educational level																								
Primary																								
Secondary	0,694	*	0,049	ns	0,731	*	0,194	ns	0,665	**	0,322	ns	0,794	*	0,320	ns	0,577	**	-0,015	ns	0,193	ns	0,632	*
Higher	0,813	*	0,424	ns	1,273	***	0,199	ns	1,677	***	1,585	***	1,089	**	0,359	ns	0,847	***	0,377	ns	-0,072	ns	0,391	ns
Unknown	0,032	ns	-0,274	ns	0,552	ns	-0,093	ns	0,985	***	-0,027	ns	0,587	ns	0,334	ns	0,394	*	-0,066	ns	-0,836	***	-0,128	ns
Place of residence																								
Outside Oslo																								
Oslo	-0,974	***	-0,477	*	-0,359	ns	0,352	ns	-0,416	*	0,280	ns	-0,396	*	0,738	**	-1,035	***	-0,783	***	0,237	ns	0,753	***
Unknown	-0,996	***	-1,117	***	0,397	(*)	0,239	ns	-0,411	*	-0,028	ns	-0,840	***	0,457	(*)	-1,850	***	-1,388	***	-0,493	***	0,076	ns
Male	1,239	***	1,315	***	-1,273	***	-0,577	**	0,778	***	-0,070	ns	-0,013	ns	-0,205	ns	0,975	***	-0,625	**	-0,087	ns	0,033	ns
Descendant	-0,384	ns	0,358	(*)	1,019	**	1,341	**	0,023	ns	0,152	ns	-0,291	ns	-0,017	ns	-1,236	**	-0,615	ns	0,772	***	0,797	***
Age at marriage	0,143	***	0,015	ns	0,084	***	0,044	*	0,239	***	0,112	***	-0,026	ns	-0,012	ns	-0,018	ns	0,032	*	-0,043	***	-0,001	ns
Age at marriage^2	-0,011	***	0,000	ns	-0,006	**	-0,002	ns	-0,013	***	-0,003	*	-0,002	ns	0,002	**	-0,010	***	-0,007	***	-0,001	ns	0,004	***
Intercept	-3,728	***	-3.751	***	-2,935	***	-3,290	***	-3,026	***	-3,253	***	-1,918	***	-2,695	***	-0,711	*	-0,492	***	1,995	***	-0,907	***
Chi-square (*df*)	241,641 (18)				102,699 (18)				495,216 (18)				65,641 (18)				355,284 (18)				348,555 (18)			
Nagelkerke R^2	0,107				0,063				0,248				0,053				0,247				0,11			
N	*5080*				*3423*				*2912*				*1608*				*1649*				*3953*			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Further, all descendant groups except India and Denmark display significant differences between the sexes regarding the chances of intermarriage, and for Turks there is only dissimilarity when it comes to majority exogamy. While men from Pakistan, Turkey and Morocco are more likely to intermarry with a majority Norwegian than their female co-nationals, Vietnam displays the contrary pattern. Remarkably, Moroccan women are more likely to mix with other minority groups than men.

Differences between generations within these groups are also at variance. While Vietnamese and Danish descendants show significantly higher probability of out-group marriage with majority Norwegians, the only other significant difference is that Moroccan descendants are less likely to intermarry than their parental generation. Figure 6.8 shows the probability differences between descendants and immigrants of all six groups. Vietnamese female descendants at primary educational level have a 11% probability of majority intermarriage, against 4% chance among Vietnamese female immigrants at the same educational level.

Figure 6.8
Predicted probability of intermarriage by generation for 6 national-origin groups. Calculated for women living in Oslo with primary education, at the group specific mean age of marriage.



Moroccan female descendants with primary education display the probability of 9% for majority intermarriage, but female immigrants from Morocco with the same educational attainment are much more likely to intermarry with majority Norwegians, showing a 23% chance.

Lastly, Table 6.3 illustrates that living in Oslo before marrying contributes negatively to the probability of majority intermarriage for all groups – with the exception of Danes. Its impact on minority mixing is diverse: For Indians and Danes, living in Oslo significantly increases the chances of wedding an immigrant or descendant (and non-significantly so for Turks and Vietnamese) of another national-origin group, while the exact opposite holds for Pakistanis and Moroccans.

6.5 Summary

How does educational level, gender, generation and age at marriage influence the probability of intermarriage? This chapter presents results from several different models and analyses showing the significance of several individual-level influences of intermarriage.

First, it was shown that there is a strong association between educational level and intermarriage across national-origin groups. While higher educational attainment before marriage increases the probability of intermarriage for both male and female immigrants, its importance is greater for women, and particularly if analyzed at all ages of marriage. Similarly, differences between the educational levels are larger for descendants than for immigrants – but smaller when controlling for marital age. It was shown that descendants' probability of intermarriage is higher than that of immigrants, controlling for age and educational level at marriage.

Second, it was revealed that the average increase in intermarriage from the lowest to the highest educational level, controlling for variation between national-origin groups, is much lower than that indicated by the first models. For descendants, age at marriage was shown to influence the probability estimates of education and intermarriage, such that the increased chance of majority exogamy from lower to higher level of education was suppressed by holding age constant. The analyses also confirmed that for descendants, educational level increases women's probability of intermarriage more than that of men – while for

immigrants, men's increase is slightly higher than that of women. Higher age at marriage was shown to increase the chances of marrying both a majority Norwegian and another minority for both immigrants and descendants, although there is a weak reduction of this association with increased age.

Third, the chapter reported results from separate models of six national-origin groups. While education has a clear positive bearing on the intermarriage rates of individuals from Vietnam, Turkey and India, and a minimal increase for Pakistanis and Moroccans, the same relationship is negative for Danes. Similarly, while descendants from Vietnam are more prone to marry a majority Norwegian than Vietnamese immigrants, the opposite is seen in the case of Moroccans and Indians.

The probability of intermarrying with majority Norwegians has been shown to differ between educational levels, genders and generations – but a crucial lesson of this chapter is the importance of accounting for national-origin group variation and age at marriage when assessing the importance of the former factors. The next chapter follows a similar design, and seeks to establish what influence these same individual-level variables have on the probability of importing a spouse.

7. Spouse import and its correlates

This chapter presents analyses of the relationship between educational level, generation, sex, place of residence, years since migration, age at marriage – and the probability of importing a spouse for those who marry endogamously, following a structural pattern akin to that of Chapter 6.

7.1 Effects across all groups

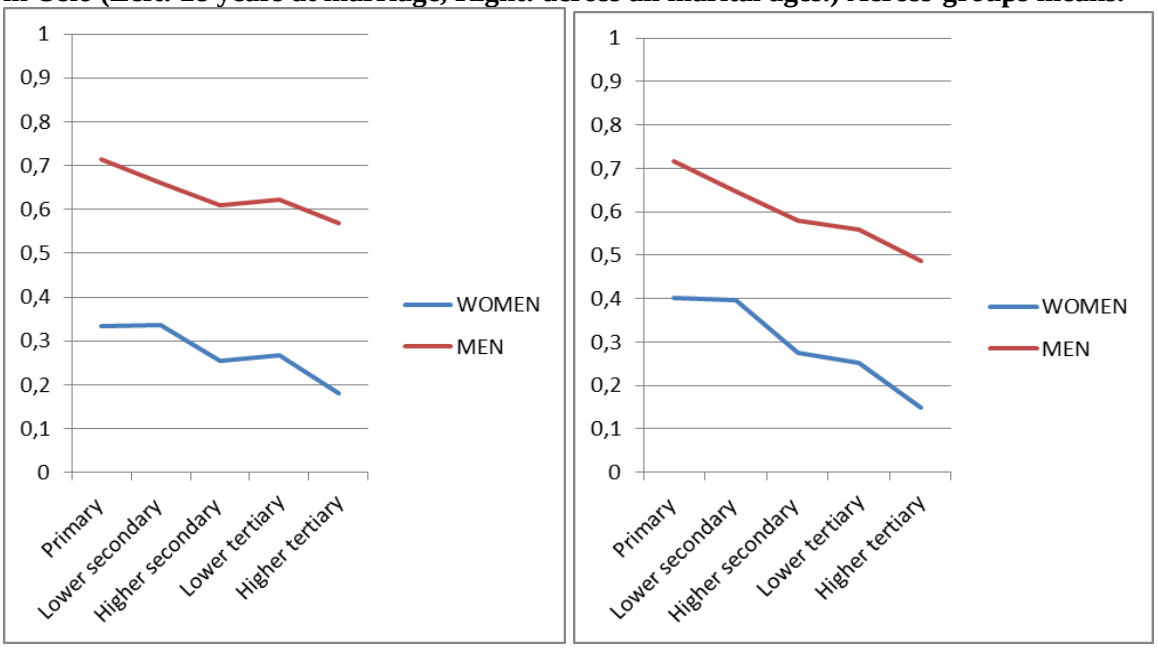
As in Chapter 6, the first analyses of spouse import estimate effects across all national-origin groups for both generations and both sexes. A table reporting the logit estimates of these analyses is included in Appendix B (Table B7.1), but some of the results are shown in Figures 7.1 and 7.2. The estimates presented by both these figures are controlled for all my independent variables except national-origin group.

Figure 7.1 shows the relationship between educational level and the probability of spouse import among endogamous immigrants living in Oslo, for men and women. The estimates are specified for those at the mean age of marriage for endogamous immigrants, 29 years. There is a clear negative relationship between educational attainment before marriage and the probability of importing a spouse. For both men and women, the likelihood of spouse import is reduced by 15% points from the lowest to the highest educational level. However, because female immigrants are much less likely to import than men overall, their probability is almost halved by the gap in educational attainment, from 33% at the lowest level to 18% at

the highest level. There is deviance from the gradient trend in that for both men and women, going from higher secondary to lower tertiary education slightly increases the probability of import – and for women, there is no difference between having primary and uncompleted secondary education.

Figure 7.1 **Figure 7.2**

Predicted probability of spouse import by educational level, for endogamous immigrants living in Oslo (Left: 28 years at marriage, Right: across all marital ages.) Across-groups means.



The *overall* impact of educational level is the same for men and women, but the descent in probability from lower to higher tertiary level is higher for women than for men. As seen in the corresponding analyses of intermarriage, the strength of both gender differences, educational attainment differences and educational impact differences between men and women depend on whether age at marriage is controlled for. The models on which all figures in this section are based (Appendix Table B7.1) shows that age at marriage is negatively related to spouse import, and that controlling for age increases gender differences but decreases educational level differences.

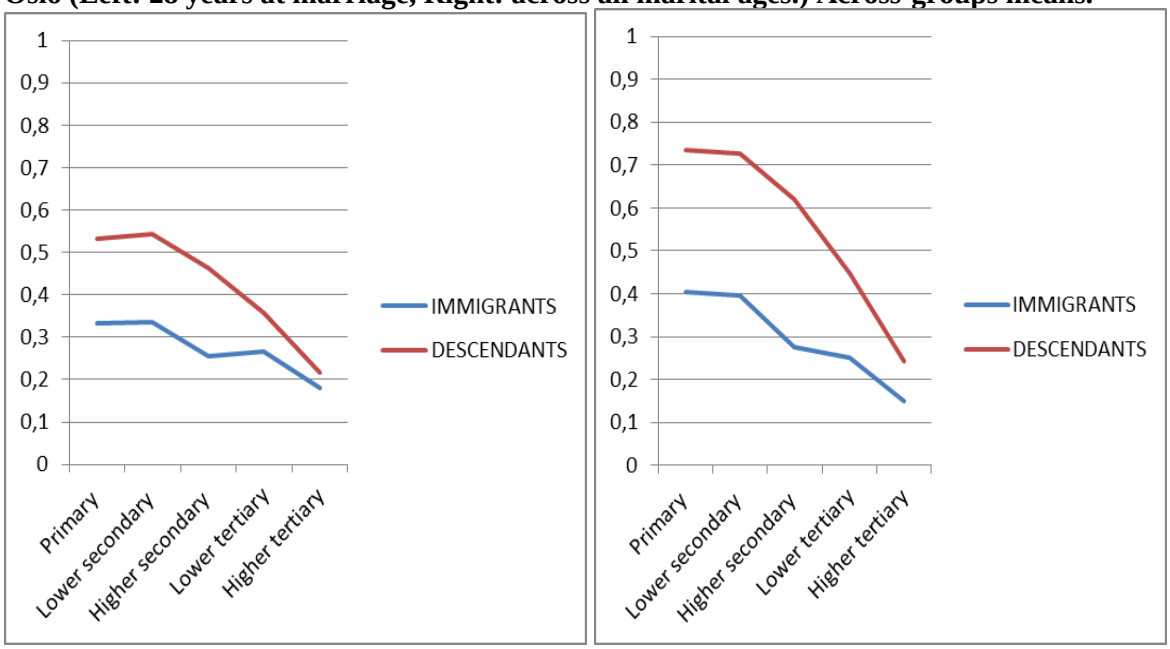
Figure 7.2 displays the probability of spouse import for all endogamous immigrants living in Oslo, by educational level and gender, and illustrates that the influence of educational level is stronger across ages than that seen at the mean age of marriage. For men, the probability of spouse import descends from 71 to 48% at the highest educational attainment. In this analysis, the influence of higher educational level is significantly lower for men than for

women – and the probability of spouse import for female immigrants falls from 25 to 14% from lower tertiary to higher tertiary education.

Figure 7.3 illustrates the association between educational level and spouse import for female immigrants and descendants separately. We see that female descendants are much more likely to import spouses than female immigrants at the lower educational levels, with a 33% chance for immigrants and a 53% chance for descendants at primary educational attainment. However, these differences are reduced almost to the extent of elimination at the higher educational levels: at higher tertiary education, female immigrants have 18% probability of spouse import, while that of female descendants is 21%.

Figure 7.3 **Figure 7.4**

Predicted probability of spouse import by educational level, for endogamous women living in Oslo (Left: 28 years at marriage, Right: across all marital ages.) Across-groups means.



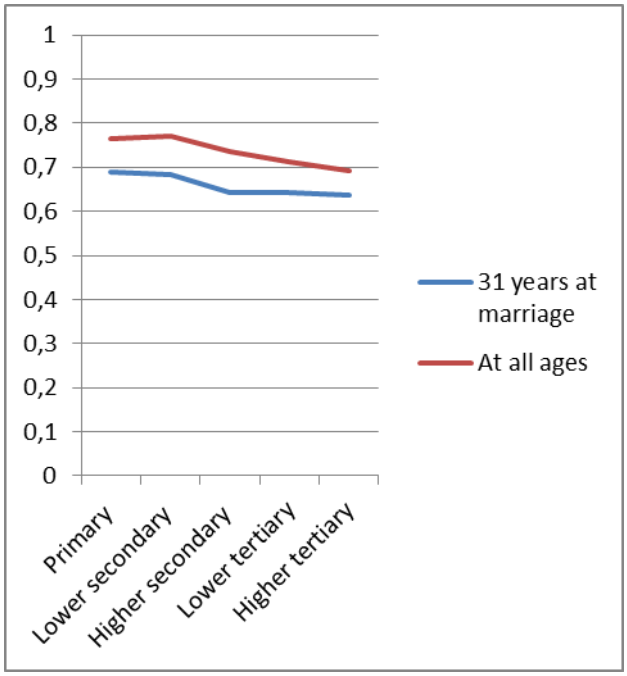
In Figure 7.4 the same relationships are depicted for women across all ages at marriage. Both the estimates of educational level and generational differences are bigger than that seen at the mean age of marriage – and particularly so for descendants. The probability of spouse import for female descendants at all ages plunges from 73% at primary education to 24% at higher tertiary education. We know that the married descendants by 2002 have a lower mean age at marriage than immigrants. Compared to immigrants marrying at the same age, the gap between the two generations is therefore smaller (7.3) than that seen across ages (7.4).

7.2 Immigrants

7.2.1 Men

I start by scrutinizing men's spouse import variations (Table 7.1). First off, we see by the Nagelkerke R^2 that the increase in model fit is steady (albeit only 5% in total). National-origin accounts for 19% of variation in model 1, and we see that its estimates vary greatly – from those who are most prone to spouse import (Pakistan) to those least inclined to it (those from the Nordic countries). Remarkably, immigrants from all regions except the Nordic countries are more inclined towards spouse import than domestic endogamy. The stepwise introduction of other regressors involves a change of some (but far from all) national-origin estimates, most visibly in the full model.

Figure 7.5
Probability of spouse import by educational level. Calculated for endogamous male immigrants from Turkey living in Oslo.



The influence of educational level is significantly lower than in the model without national-origin group variation held constant. Also, both the strength of estimates is reduced when age at marriage is held constant. Figure 7.5 illustrates this for male Turkish immigrants, and shows that the confounding effects of age at marriage on educational level differences are smaller than at the across-group level.

Table 7.1 Binomial logit models of spouse import among endogamous immigrants. Men.

Model	1		2		3		4	
National/regional group								
South America (Ref.)								
Pakistan	2,407	***	2,255	***	2,320	***	2,123	***
Turkey	2,060	***	1,954	***	1,979	***	1,745	***
Vietnam	0,295	***	0,298	**	0,312	***	0,135	**
India	2,173	***	2,088	***	2,139	***	2,020	***
Other Asian	1,151	***	1,274	***	1,258	***	1,206	***
Morocco	2,190	***	2,206	***	2,236	***	2,200	***
Other African	0,939	***	1,048	***	1,071	***	1,073	***
Nordic countries	-1,158	***	-1,380	***	-1,326	***	-1,365	***
Western Europe	0,508	***	0,279	*	0,352	ns	0,332	ns
Eastern Europe	0,722	***	0,806	***	0,826	***	0,763	***
North America and Oceania	0,903	**	0,681	**	0,722	ns	0,675	ns
Educational level								
Primary (Ref.)								
Lower secondary			0,029	ns	-0,013	ns	-0,024	ns
Higher secondary			-0,167	*	-0,205	**	-0,204	**
Lower tertiary (BA)			-0,271	***	-0,278	***	-0,201	**
Higher tertiary (MA)			-0,378	***	-0,350	**	-0,232	*
Unknown			-0,068	ns	-0,024	ns	0,015	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo			-0,199	***	-0,204	***	-0,207	***
Unknown			0,635	***	0,659	***	0,601	***
Length of stay								
1-2 years (Ref.)								
3-5 years					-0,066	***	-0,015	ns
6-9 years					0,347	*	0,449	***
10-15 years					0,303	***	0,508	***
16-42 years					-0,393	***	0,040	ns
Age at marriage							-0,038	***
Age at marriage^2							0,000	ns
Intercept	-0,530	***	-0,572	***	-0,715	***	-0,748	***
−2LL (*df*)	19383,558 (11)		18381,610 (18)		18210,048 (22)		18047,175 (24)	
Nagelkerke R^2	0,197		0,226		0,237		0,249	
N	*16,803*		*16,803*		*16,803*		*16,803*	

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Table 7.2 Binomial logit models of spouse import among endogamous immigrants. Women.

Model	1		2		3		4	
National/regional group								
South America (Ref.)								
Pakistan	2,089	***	2,092	***	2,159	***	1,719	***
Turkey	2,157	***	2,146	***	2,192	***	1,631	***
Vietnam	-0,802	***	-0,923	***	-0,886	***	-1,201	***
India	1,646	***	1,635	***	1,701	***	1,582	***
Other Asian	0,155	ns	0,264	**	0,361	**	0,218	ns
Morocco	1,698	***	1,694	***	1,788	***	1,501	***
Other African	-0,274	(*)	-0,225	ns	-0,115	ns	-0,165	ns
Nordic countries	-0,806	***	-0,932	***	-0,789	***	-0,775	***
Western Europe	-0,629	*	-0,576	ns	-0,431	ns	-0,423	ns
Eastern Europe	0,243	(*)	0,390	***	0,509	***	0,251	ns
North America and Oceania	0,599	*	0,596	*	0,603	*	0,588	(*)
Educational level								
Primary (Ref.)								
Lower secondary			0,057	ns	0,020	ns	0,052	ns
Higher secondary			-0,353	***	-0,381	***	-0,187	(*)
Lower tertiary (BA)			-0,343	***	-0,327	**	0,082	ns
Higher tertiary (MA)			-1,001	***	-0,920	***	-0,291	ns
Unknown			-0,584	***	-0,423	***	-0,198	(*)
Place of residence								
Outside Oslo (Ref.)								
Oslo			0,017	ns	-0,019	ns	0,061	ns
Unknown			0,531	***	0,659	***	0,481	***
Length of stay								
1-2 years (Ref.)								
3-5 years					0,074	ns	0,201	(*)
6-9 years					0,571	***	0,764	***
10-15 years					0,711	***	1,034	***
16-42 years					-0,180	ns	0,492	**
Age at marriage							-0,101	***
Age at marriage^2							0,005	***
Intercept	-1,270	***	-1,122	***	-1,590	***	-1,947	***
−2LL (*df*)	9031,433 (11)		8282,575 (18)		8170,097 (21)		7814,140 (24)	
Nagelkerke R^2	0,272		0,308		0,322		0,369	
N	*8737*		*8737*		*8737*		*8737*	

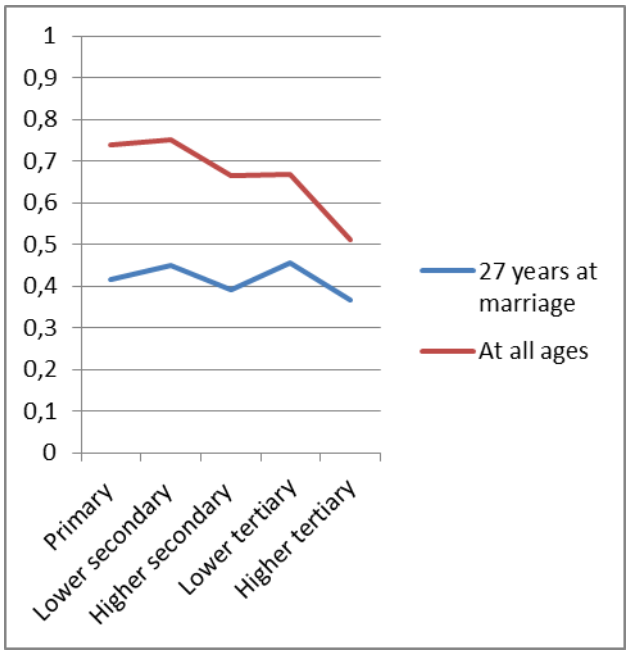
Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Endogamous male immigrants from Turkey with higher tertiary education living in Oslo are 69% likely to import a spouse (compared to their peers with only primary education at 77%). However, at the mean age of male endogamous immigrants, members of the same group have a 63% chance of spouse import, against the 69% chance of those at primary education level.

7.2.2 Women

In the spouse import analyses of female immigrants (Table 7.2), there is a non-trivial increase in model fit shown by the Nagelkerke R^2 measure. Both the magnitude and increase is higher than for men, indicating that national-origin accounts for 27% of the 37% total variation accounted for in the full model (4). As seen in Chapter 5, between-group variation for women is much more noticeable than that of men. Here, several groups display inclination towards domestic endogamy rather than spouse import. The stepwise introduction of other regressors involves a visible reduction of national-origin estimates in the full model. Pakistani and Turkish immigrants are much more prone to spouse import than Moroccans and Indians before entering age at marriage in the model, but holding this characteristic constant makes the differences between these national-origin groups much smaller, clearly caused by the very young average age at marriage among immigrant women from Pakistan and Turkey (as seen in the descriptive statistics of Table 5.6).

Figure 7.6
Predicted probability of spouse import by educational level. Calculated for endogamous female immigrants from Turkey living in Oslo.



The effect of educational level is negative and largely gradient in models 2 and 3 (where the effect of an MA degree is significantly higher than for men), but most coefficients are rendered non-significant in the full model. Figure 7.6 illustrates the differences in spouse import probability associated with educational attainment, comparing this relationship at constant age at marriage (the mean for

endogamous female immigrants) and across all ages for Turkish women. Comparing this figure with Figure 7.5 confirms that among immigrants, educational differences mean more to women than to men when it comes to spouse import probability. However, the relationship is highly intertwined with age at marriage, and more so here than for men. While the chances of spouse import drops from 71% to 50% from the lowest to the highest educational level across all ages, the corresponding difference between those marrying at 27 years is 41% to 36%. Albeit this is still a reduction, the magnitude of the age control here compared to in the analysis of men speaks to the systematically lower ages at which women marry than men.

A brief comment on the control variables of Tables 7.1 and 7.2 is pertinent. Living in Oslo is negatively associated with spouse import for men, but has no impact on spouse import for female immigrants. Estimates for length of stay display a curvilinear relationship for both genders: the least likely to import a spouse among immigrants of both genders are those who have stayed only briefly (under 5 years) and those who have stayed more than 16 years. The effects of 6-15 years of stay seems to be slightly suppressed by the fact that those who stay long before marrying also get older before marrying, and the latter is negatively associated with spouse import. However, this also reduces the effect of the 16+ years since migration coefficients, as members of this category belong to the upper echelons of age at marriage.

7.3 Descendants

7.3.1 Men

Table 7.3 shows analyses of spouse import among male descendants. This is the smallest subgroup for which separate analyses are performed in this thesis (N = 880). The model fit improvement is higher than for both male and female immigrants (Nagelkerke R^2 from 6% to 18%). However, due to the low number of observations and rising standard errors, few of the estimates in the final model are statistically significant (even at the 10 percent level).

The variation among national-origin groups is condensed visibly in the full model (model 3). In particular, it should be noted that the coefficients for Pakistan and Turkey are much reduced in the last model, signalling that these groups have low average ages at marriage.

Without controlling for age at marriage, educational level has a forceful and gradient negative impact on the chance of spouse import. In the model with age at marriage, however, all education level estimates are rendered statistically non-significant. Place of residence has negligible and non-significant effects (except that unknown residence without control for marital age increases the chance of importing a spouse). Age at marriage, on the other hand, has a prominent negative effect, with a significant curvilinear term. Thus, age at marriage decreases the chances of spouse import among the endogamous male descendants, but this relationship turns with age.

Figure 7.7
Predicted probability of spouse import by educational level. Calculated for endogamous male Turkish descendants living in Oslo.

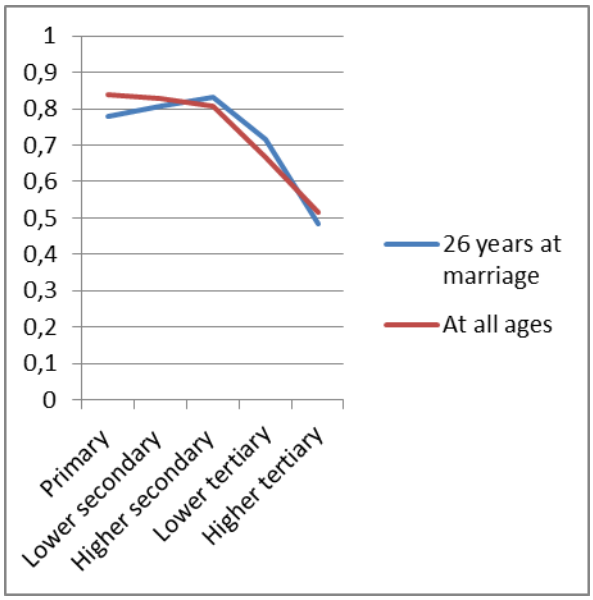


Figure 7.7 plots the relationship between education and spouse import for male Turkish descendants. It tells us that there is a drop from 83% chance of spouse import at primary education to 51% chance at higher tertiary education across all ages of marriage. The corresponding difference at the mean age of marriage is that of 78% against 48%, which indicates that controlling for age at marriage *does not* significantly reduce the effect of educational level on spouse import probability for male descendants.

This should be compared, first, with the tendency viewed among male immigrants – for which educational level had little influence on the probability of spouse import, but who also saw little influence of age at marriage on this relationship. Second, we saw in the first section that both with and without control for age at marriage, educational level influenced spouse import propensities among descendants much more than among immigrants (illustrated by women, but this also holds for men).

Table 7.3 Binomial logit models of spouse import among endogamous descendants. Men.

Model	1		2		3	
National/regional group						
All other (Ref).						
Pakistan	0,755	**	0,828	***	0,391	ns
Turkey	1,043	***	1,118	***	0,544	ns
Vietnam	-0,633	**	-0,476	ns	-0,889	*
India	1,653	***	1,878	***	1,560	**
Morocco	1,080	(*)	1,083	(*)	0,834	ns
Educational level						
Primary (Ref.)						
Lower secondary			-0,081	ns	0,087	ns
Higher secondary			-0,210	ns	0,169	ns
Lower tertiary (BA)			-0,963	**	-0,168	ns
Higher tertiary (MA)			-1,594	*	-0,661	ns
Unknown			-0,052	ns	-0,005	ns
Place of residence						
Outside Oslo (Ref.)						
Oslo			-0,066	ns	-0,090	ns
Unknown			0,667	(*)	0,203	ns
Age at marriage					-0,213	***
Age at marriage^2					0,006	*
Intercept	0,478	*	0,598	*	0,808	*
−2LL (*df*)	934,530 (5)		900,618 (12)		851,048 (14)	
Nagelkerke R^2	0,065		0,100		0,178	
N	*880*		*880*		*880*	

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

7.3.2 Women

Table 7.5 shows analyses of spouse import among female descendants. As with immigrants, the Nagelkerke R^2 is generally higher than that of men, but the increase in model fit from model 1 to 3 is lower than in table 7.4. As in the former analysis, however, only national-origin group estimates and age at marriage are statistically significant in the final model.

Educational level and place of residence actually slightly enlarge the estimates of national-origin group, indicating that while these groups (except Vietnam) are generally more prone

to import than others, comparing their spouse import rates with the population mean at the same educational level and residential area further accentuates their inclinations towards finding a spouse in the country of origin. Opposed to this, age at marriage significantly lowers the national-origin estimates, suggesting that these groups are younger than average at marriage (which in itself is an indicator of higher spouse import probability).

We observe a gradient negative effect in the coefficients for educational level for model 2, a tendency largely nullified and made non-significant by age at marriage in model 3. As signalled, age at marriage is negatively related to the chances of importing a spouse, with a

Table 7.4 Binomial logit models of spouse import among endogamous descendants. Women.

Model	1		2		3	
National/regional group						
All other (Ref).						
Pakistan	0,846	***	1,031	**	0,751	**
Turkey	0,936	***	1,017	*	0,592	*
Vietnam	-1,867	***	-1,668	**	-2,013	***
India	0,513	(*)	0,797	***	0,577	ns
Morocco	0,781	*	0,922	*	0,598	(*)
Educational level						
Primary (Ref.)						
Lower secondary			-0,057	ns	0,021	ns
Higher secondary			-0,361	(*)	-0,111	ns
Lower tertiary (BA)			-0,926	***	-0,211	ns
Higher tertiary (MA)			-1,241	*	-0,004	ns
Unknown			-0,342	ns	-0,323	ns
Place of residence						
Outside Oslo (Ref.)						
Oslo			-0,193	ns	-0,188	ns
Unknown			0,289	ns	0,192	ns
Age at marriage					-0,135	***
Age at marriage^2					-0,008	ns
Intercept	0,393	*	0,552	*	0,796	**
−2LL (*df*)	1400,338 (5)		1312,449 (12)		1262,510 (14)	
Nagelkerke R^2	0,108		0,144		0,196	
N	*1281*		*1281*		*1281*	

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

statistically non-significant negative curvilinear term.

Figure 7.8
Predicted probability of spouse import by educational level. Calculated for endogamous female Turkish descendants living in Oslo.

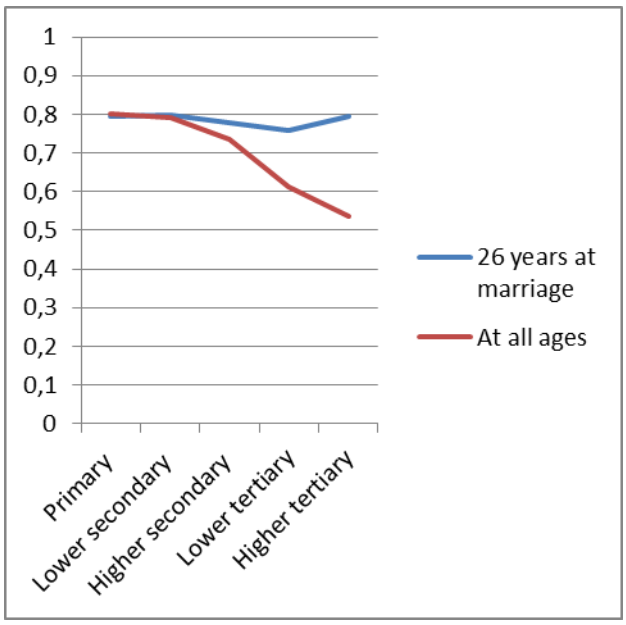


Figure 7.8 shows the magnitude of educational level's impact on probabilities of spouse import for female Turkish descendants, with and without control for marital age. As was the case for female immigrants, the confounding effect of age at marriage is more forceful than for their male peers. Turkish female descendants across marital ages reduce their probability of importing a spouse from 80% at the lowest educational level to 53% at the highest educational level – but at the marital age of 28 years, the only non-negligible difference according to educational attainment is a 4% decrease from primary to lower tertiary level.[50]

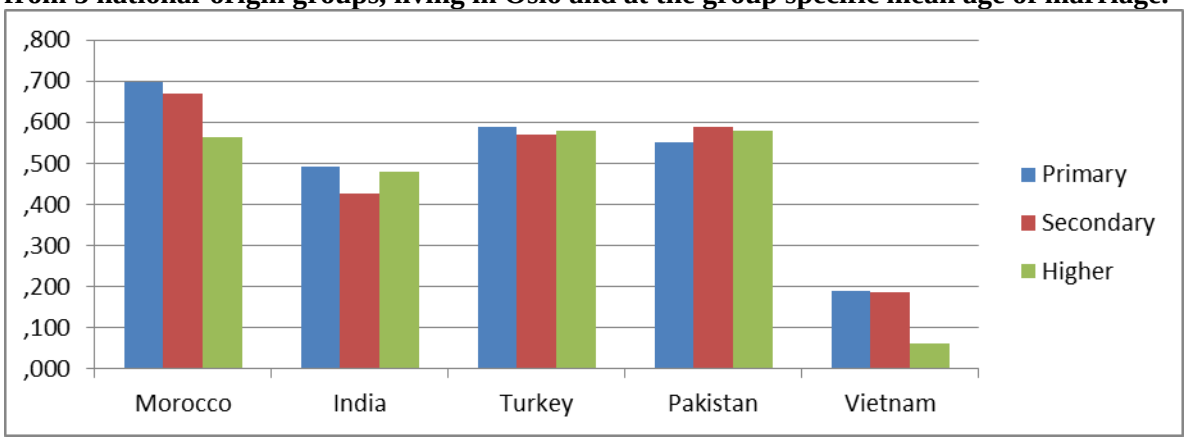
7.4 Five national-origin groups

All binomial models in this chapter so far have bracketed potential between-group differences in the role that education, gender, generation and other regressors play in choosing to import a spouse. To disclose some of the group variation for these variables,

[50] As in Chapter 6, the statistical significance of differences in the influence of educational level between both men and women, and descendants and immigrants, has been checked with interaction terms in a model not shown here (i.e. a model similar to that in A7.1 but controlling for national-origin group variation). The results show that gender differences in the impact of educational level are non-significant, but that the differences related to educational level between immigrants and descendants are significantly different at lower tertiary educational attainment ($p>0.05$). Among descendants, gender differences in the impact of educational level differences on the probability of spouse import were non-significant, which is probably due to the low number of observations (as the difference is rather large controlling for age at marriage). However, differences between generations when it comes to spouse import were all statistically significant ($p>0.05$ or lower). Again, SPSS outputs can be retrieved at request.

Table 7.5 exhibits results from five separate analyses of spouse import influences for individuals from Pakistan, Vietnam, Turkey, India, and Morocco.[51]

Figure 7.9
Predicted probability of spouse import by educational level. Calculated for female descendants from 5 national-origin groups, living in Oslo and at the group specific mean age of marriage.



The last section of Chapter 6 demonstrated that educational level negatively influenced the intermarriage rates of Moroccans, while it positively influenced the intermarriage rates of Vietnamese and Turks. Figure 7.5 shows that the role of educational differences also impacts differently on the spouse import propensities of different national-origin groups, controlling for age at marriage. Female endogamous Moroccan descendants with primary education have a 70% chance of being spouse importers, while those with higher educational attainment are 56% likely to import a spouse. The corresponding drop among the Vietnamese is 19% to 6%. For the three other groups, educational level has negligible influence on the propensity to import a spouse.

[51] The reason I have not included a "western" reference group here (like Denmark in the intermarriage analyses) is that no such group exists where the size of both generations is adequate for analysis with this many degrees of freedom.

Table 7.5 Binomial logit estimates of spouse import. Five national-origin groups.

	Vietnam		Pakistan		Turkey		India		Morocco	
Educational level										
Primary (Ref.)										
Secondary	-0,008	ns	0,153	ns	-0,080	ns	-0,259	ns	-0,122	ns
Higher	-1,281	***	0,110	ns	-0,043	ns	-0,046	ns	-0,570	(*)
Unknown	-0,090	ns	-0,080	ns	-0,327	*	-0,392	ns	-0,366	ns
Place of residence										
Outside Oslo (Ref.)										
Oslo	0,054	ns	-0,405	***	-0,145	ns	-0,622	**	-0,815	***
Unknown	-0,592	***	1,103	***	0,373	*	0,329	ns	0,395	ns
Male	1,826	***	0,842	***	1,049	***	1,436	***	1,392	***
Descendant	0,326	ns	-0,308	**	-0,296	*	-0,009	ns	0,603	(*)
Age at marriage	0,017	(*)	-0,114	***	-0,169	***	-0,097	***	-0,036	*
Age at marriage^2	0,001	ns	0,002	***	0,005	***	0,002	*	-0,001	ns
Intercept	-1,842	***	0,917	***	0,798	ns	0,593	*	1,042	***
−2LL (*df*)	3297,761 (9)		4011,433 (9)		2084,942 (9)		1094,060 (9)		936,835 (9)	
Nagelkerke R^2	0,219		0,145		0,195		0,192		0,189	
N	3158		4729		2436		1205		1065	

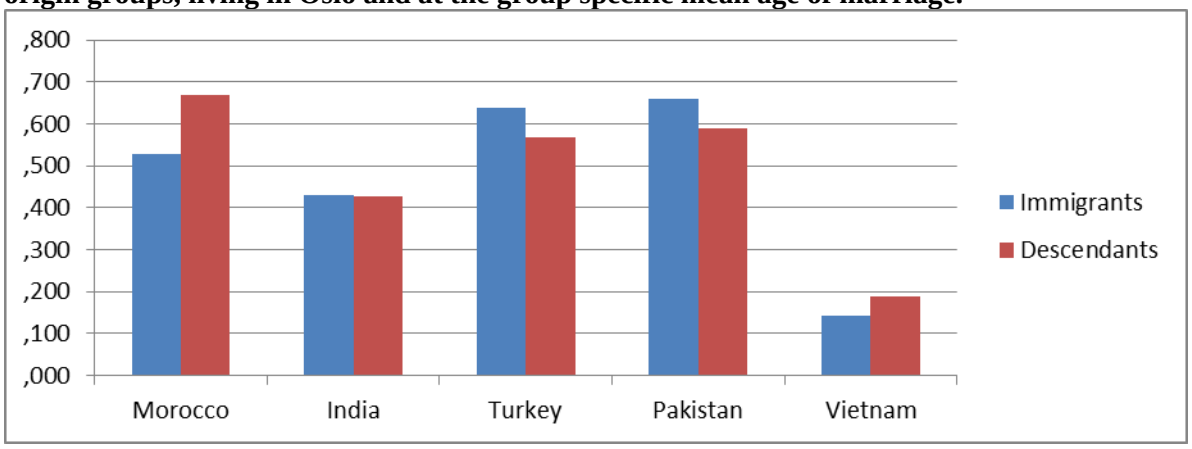
Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Table 7.5 includes a couple of variables not illustrated in figures. It indicates that living in Oslo is associated with less probability of importing a spouse for Pakistanis, Indians and Moroccans, but has no statistically significant effect on either Turks or Vietnamese. In all five groups, men are significantly more likely to import than women, but the difference is most pronounced for Vietnamese and least palpable among the Pakistanis. Finally, age at marriage impacts negatively on the chances of spouse import for all groups except the Vietnamese, who actually tend to import more as they get older. For Pakistanis, Turks and Indians the effect is positively curvilinear, implying that older age at one point stops decreasing the chances of spouse import for these groups.

The across-group tendency seen in previous sections was that endogamous descendants tend to be more prone to spouse import than endogamous immigrants. Figure 7.10 indicates that this also depends on the national-origin group. While Moroccan and Vietnamese female

descendants are more likely to be spouse importers than immigrant women from the same groups, the opposite is true of those from Turkey and Pakistan (both 7% points lower probability than immigrants).

Figure 7.10
Predicted probability of spouse import by generation. Calculated for women from 5 national-origin groups, living in Oslo and at the group specific mean age of marriage.



7.5 Summary

Are there differences among the endogamous that may help explain why some of them have chosen to import a spouse, while others have not? This chapter presents results from different models and analyses showing the significance of several individual-level influences of spouse import.

First, it was shown that the average trend across groups is that descendants are more likely to import spouses if endogamous, controlled for educational level and age at marriage. There is also a clear negative association between educational level and spouse import for men and women among both immigrants and descendants. My analyses indicated that higher educational attainment before marriage decreases the probability of spouse import for descendants more than for immigrants, and slightly more for women than for men. Similarly, age at marriage confounds the relationship between educational level and spouse import probability more for women than for men – and particularly among female descendants, whose average age at marriage is very low.

Second, I introduced control for national-origin group variation in the regressors. It was revealed that for male immigrants, much of the across-group relationship between

educational level and spouse import is probably due to between-group variation in educational attainment. However, the average controlled association between level of education and spouse import for female immigrants was shown to be clearly negative, although this relationship is clearly confounded by age at marriage. Further, we saw that for male descendants, educational level has a large negative association with the probability of spouse import, largely unrelated to age at marriage. For female descendants, controlling for age at marriage eliminates sizeable differences between educational levels across all ages.

Third, the results from separate models of five national-origin groups again displayed diversity in the importance of regressors. It was revealed that Moroccans and Vietnamese are less likely to import the higher their educational level, while the other three national groups displayed no significant differences according to educational attainment. However, while female descendants from Vietnam and Morocco are more likely to import than female immigrants from the same countries, those with Turkish and Pakistani background display less propensity of finding a spouse in their country of origin than women from their parental generation.

In Chapter 6, I assessed the influence of national-origin group, educational level, generation, gender and age at marriage on the probability of intermarriage. In this chapter we have seen a similar implementation of models on the probability of spouse import among the endogamous. The result is a series of statistical relationships between factors that convey information about individuals from before they got married, and the outcome of their spouse selection. Are these findings in line with the empirical expectations generated in the theoretical section? What mechanisms are more likely to be at work here? The next chapter seeks to integrate the empirical discoveries in the last three chapters with previous research and theory, in a conclusion about the influences of intermarriage and spouse import in Norway.

8. Summary and discussion

This study offers the first multivariate analyses of the spouse selection of the immigrant population in Norway. Chapter 5 presented contingency tables of national-origin group and spouse selection outcome, describing the patterns of intermarriage and spouse import. Through modeling the impact of several regressors, Chapters 6 and 7 gave a more accurate description of who among the immigrant population selects to marry outside of their national-origin group, and who chooses to import a spouse from their country of origin. The present chapter seeks to link these findings to theory and previous research. First, it discusses the most important results of my empirical analyses, in light of the mechanisms and hypotheses forwarded in Chapter 3. Second, it proposes pathways for further research on the intermarriage and spouse import of the immigrant population in Norway.

8.1 Evaluating the hypotheses and mechanisms

This section assesses each hypothesis generated in Chapter 3, and discusses whether the empirical findings have corroborated or undermined the explanatory mechanisms. To summarize the match between theory and results, Tables 8.1 through 8.4 give a schematic outline of the validity of hypotheses and their corresponding mechanisms.

8.1.1 Persisting boundaries of intimacy

This thesis does not seek to give a full-blown account of why national-origin groups differ in their spouse selection patterns. However, as the theme is spouse selection by national-origin group, and because there are fundamental mechanisms of such spouse selection related to factors proxied by national-origin group in this study, the impact of national-origin group is a crucial part of my analyses.

Hypothesis 1a suggested that because there is great variation between national-origin (and regional) groups in their similarity to majority Norwegians (both in terms of socioeconomic, religious and cultural measures), their propensity to intermarriage with the majority population varies accordingly. More specifically, the hypothesis first proposed that Asian and African groups are most endogamous, and that Northern Europeans and Northern Americans are most exogamous. The bivariate analyses of Chapter 5 largely confirm this pattern, and as indicated by Table 8.1, hypothesized differences between national and regional groups largely remain statistically significant in the multivariate analyses (more on this below). Although there are deviant countries within most regional groups, Asian immigrants are unambiguously the most endogamous group, followed by Africans, Eastern Europeans, South Americans, Western Europe, and North Americans. The polarization is enhanced for descendants, in that individuals from the largest European groups are highly unlikely to marry endogamously, while the large Asian and African groups are as endogamous as or even more endogamous than their parents.

The principal mechanisms generating hypothesis 1a were the *likeness-leads-to-liking* and *dissimilarity-breeds-dislike* patterns, predicting that perceived "sociocultural" differences (Epstein and Guttman 1984: 273) and perceived differences through physical visibility as minority (Rogstad 2000) (i.e. "racial features") would make intermarriage unlikely. Following the logic and rough grouping of culturally dissimilar countries and racially dissimilar countries proposed by Kalmijn and Van Tubergen (2006), one could argue that my findings seem to indicate that skin color matters less than perceived cultural distance for the probability of intermarriage in Norway (akin to findings from the Netherlands). However, I want to stress a problem with this interpretation. Fundamentally, it seems to suppose, first, that there is a "racial hierarchy" in which Africans are at the bottom, second, that certain Asian groups are "culturally" than "racially" different. In reality, I think that these factors are

hard to disentangle: as I suggested when depicting the *likeness-leads-to-liking* and *dissimilarity-breeds-dislike mechanisms*, physically visible differences often work as indicators of cultural differences – which from the perspective of these mechanisms is probably more important as a direct influence on intermarriage patterns.

Table 8.1 Summary of results, intermarriage

Variable	Expected finding	Confirmed?*	Intermarriage mechanisms
National-origin group	÷ Asian and African groups +North European and North American groups	***Yes***	*Likeness /Dissimilarity/Reference Group*
xEducational level	+ "Non-Western" groups	*Yes*	*Status Exchange*
Educational level	+	*Yes*	*Status Exchange, Tolerance, Composition*
Gender	+ Men	*Descendants: Yes / Immigrants:* ***No***	*Status Exchange, Patriarchy*
xEducational level	+ Women	*Descendants: (Yes) / Immigrants: No*	*Divergence in Freedom*
Generation	+ Descendants	*Yes*	*Convergence, Identity*
xEducational level	+ Descendants	***Yes***	*Tipping Point, Universities as Marriage Markets*
Age at marriage	+	***Yes***	*Parental Influence + Likeness-breeds-liking*

*Answers in bold signify clear and statistically significant evidence, answers in brackets signal that control for age at marriage makes the relationship non-significant.

As indicated by Daugstad (2009), religiosity might have more of an explanatory power here. Being deeply religious often carries strong preferences of finding a spouse of the same faith. Muslims make up contemporary Norway's biggest minority-religious group (Statistics Norway 2009). As is well known, several of the large national-origin groups of the immigrant population in Norway, such as Pakistan, Turkey, Iraq, Somalia and Morocco, are predominantly Muslim. These groups have been shown to intermarry to a lesser degree than most other groups – and several of them (Pakistan, Turkey, Morocco) are importing spouses at very high rates. However, what is not clear is the reason why members of these groups do not intermarry with each other to larger extent: this signals that religious likeness is far from a sufficient condition to enable a mutual preference of each other as a potential spouse.

The *reference group* mechanism suggested that the role of both direct influence from third parties and the indirect influence of others' spouse selection within the group will be of great importance. Partly, I think this may explain why some of the groups who have stayed in Norway the longest (e.g. Pakistanis, Turks, Moroccans and Vietnamese) remain highly endogamous. Many of the original immigrants from these groups had spouses in their home

country with which they soon reunified, others fled with their families. Partly because of relative group size, and partly because of the incipient situation of not having meant to stay and incorporate in Norwegian society (Brochmann and Kjelstadli 2008: 201), selecting a spouse from within the group would have appeared the only viable option. The reference group/third party mechanism thus suggests that when there is such an established pattern within the national-origin group, there is a significant normative barrier against intermarriage.[52]

Hypothesis 1a also submits that there will be a similar continuum with regards to spouse import. Again, the prediction is largely correct; among immigrant groups, the regional differences are large, disregarding a few deviant cases (e.g. men from Great Britain and Macedonia). Because of too few endogamous descendants of different groups, meaningful analyses of the magnitude of between-group differences in spouse import could not be performed for them.

The *Keeping the Homeland Connection* mechanism suggested that if differences between a national-origin group and the majority are large, it is not only reasonable that individuals will seek "input" from the homeland because they prefer them as spouses, but the third parties around the spouse-to-be might see an opportunity of an in-law with the right values, taste and knowledge *and* strengthen the relationship to the "homeland". Obviously, following *the logic of numbers*, spouse import will appear even more desirable for those belonging to a small national-origin group than those with many residing co-nationals to choose between.

The results concerning national-origin group and spouse import do not fit well with the idea of a demographic gravity pulling people to their country of origin to find a spouse. Several of the large groups in the immigrant population of Norway as of 2002 (Lie 2004: 18) (Pakistan, Turkey, India) display much spouse import, and there are groups whose relative size would indicate much more spouse import than that displayed here (Netherlands, Germany, Iceland) which indicates that the logic of numbers at the very least does not frame a necessary or

[52] Tuastad (2008: 43) suggests that endogamy is idiosyncratic of many Middle-Eastern countries, partly derived from Arab kinship culture and partly as a derivation of the importance of territoriality as a space that is *communally* controlled. As the state is more withdrawn in some parts of the world, the need to "keep to oneself" may have developed as a subsistence strategy. This might be the inception of consanguineous marriages and marriages within the group more generally.

sufficient premise for this choice. This unexpected result matches that of Gonzalez-Ferrer (2006), who finds that size of resident community increases chances of spouse import. Again, I think that the *reference group/third party* mechanism is more promising. Owing to the pattern depicted above, immigrants and descendants from old, "non-western" groups would find the option of importing a spouse perfectly natural: after all, this practice has been part of the collective behavior of some of these groups since their inception in Norway.

The "full" regression models of Chapters 6 and 7 largely confirm *hypothesis 1b*, that the multivariate analyses display roughly the same tendency regarding differences of both intermarriage and spouse import between national-origin and regional groups. This indicates two things: First, the relative importance of mechanisms suggesting that certain national backgrounds are particularly associated with endogamy and spouse import. Second, it demonstrates that the differences between these groups in spouse selection patterns are to a small extent attributable to the variation in the other explanatory variables included in these analyses. Clearly, the approach of segmented assimilation (Bean and Stevens 2003: 99), arguing that different types of immigrants also differ greatly when it comes to type and degree of integration, also holds for the intermarriage variations between groups *regardless* of their variation according to the independent variables included in these analyses.[53]

8.1.2 Education – an asset in the intergroup marriage market?

Perhaps the key theme of this thesis is the degree to which educational level influences intermarriage and spouse import. In Chapter 3, *hypothesis 2a* predicted that level of education is positively associated with the probability of intermarriage, and negatively associated with the probability of spouse import. Although the strength of these relationships vary between models (and sexes and generations, see below), the general tendency across all analyses is a (weak) confirmation of this hypothesis. The across-group association of education with intermarriage was greatly reduced by controlling for national-origin variation, which suggests that the relationship is confounded. Given the strong tendency of national-

[53] However, as suggested in the future research section, control variables such as sex ratio, group size and other group characteristics (both cultural and demographic [Kalmijn and Van Tubergen 2010]) are likely to reduce the differences between national-origin groups to a larger extent than that seen in this study.

origin group variation in intermarriage *while controlling for education*, there is no reason to believe that overlapping variation in education and intermarriage can be explained by the fact that educational level influences intermarriage level. This indicates that some previous studies (e.g. Van Tubergen and Maas 2007; Celikaksoy et al. 2009; Kalmijn and Van Tubergen 2010) enmesh the explanatory value of education with its uneven distribution on the very heterogeneous immigrant population.

Table 8.2 Summary of results, spouse import

Variable	Expected finding	Confirmed?*	Spouse import mechanisms
National-origin group	**+**Asian and African groups	***Yes***	*Keeping the Homeland Connection/Reference Group*
Educational level	**÷**	***Yes***	*Universities as Marriage Markets*
Gender	**+** Men	*Descendants: Yes / Immigrants:* ***Yes***	*Sex Ratio*
xEducational level	**+** Women	*Descendants: (No) / Immigrants: Yes*	*Divergence in Freedom*
Generation	**+** Immigrants	***No***	*Convergence, Identity*
xEducational level	**+** Descendants	*Men:* ***Yes*** */ Women: (No)*	*Universities as Marriage Markets*
Age at marriage	**÷**	***Yes***	*Parental Influence + Likeness-breeds-liking*

*Answers in bold signify clear and statistically significant evidence, answers in brackets signal that control for age at marriage makes the relationship non-significant.

Built on a proposal made in previous research (Hwang et al. 1995; Kalmijn 1998: 401), *the tolerance mechanism* suggests that higher education weakens the bonds people have to their social and cultural roots. The possibility of these mechanisms being at work is not disconfirmed by the empirical findings: for both men and women of both generations, higher educational level increases the chances of intermarriage on average – controlling for the educational level variation between national-origin groups. However, this average association is not very strong, as illustrated in Chapter 6.

Controlling for age at marriage also reduces the effect of educational level on spouse selection. The most evident interpretation of this comes from the obvious fact that finishing higher education before marriage logically implies that the agent in question did not marry early. Thus, those registered with higher education will have much higher age at marriage than the population mean, and if the association of educational level to various spouse selection outcomes is estimated without controlling for age at marriage, the fact that early age in itself increases the chances of endogamy and spouse import will confound the results. However, the causal relationship may be more intricate than that. Early marriage is more

frequent among those with low socioeconomic background (Wiik 2009), and this group is less likely to achieve higher education than those of higher socioeconomic background. It may be the case that having parents of low education influences both your probability of achieving higher educational levels, your probability of marrying early *and* your probability of marrying endogamously (or importing a spouse). Regardless of what ultimately generates this pattern, however, these results indicate that previous research not including age at marriage as control (e.g. Jacobs and Labov 2002; Gonzalez-Ferrer 2006; Kalmijn and Van Tubergen 2006) may have misestimated the magnitude of educational differences in intermarriage probability. Although those marrying at young age *do* lack the assets suggested that higher education might present at the marriage market, as we shall see below, they are also more likely to marry endogamously than those older *without* higher educational attainment.

The *status exchange mechanism* involved the claim that individuals of low-status minority groups with higher education may use their socioeconomic position as an asset on the marriage market, and exchange it against the higher-status majority background of their partner. This generated *hypothesis 2b*, which submits that the association between educational level and intermarriage varies according to the status of the national-origin group. The evidence of this hypothesis is mixed and inconclusive. As is displayed in Table 8.3, while all "non-western" groups do display more effect of educational level than the only "western" group analyzed (Denmark), Pakistanis and Moroccans have a negligible increase in the probability of marrying with majority Norwegians at higher educational attainment. The pattern is not strictly what we would expect on the basis of the exchange mechanism, because the "ethnic status" of the latter groups is arguably different from that of the majority population. As suggested below, however, there are much better ways of assessing the status exchange mechanism in future research.

8.1.3 Bridal import, groom's selection

Spouse selection patterns are probably deeply intertwined with gender differences along many dimensions. *Hypothesis 3a* posited that men are generally more likely to intermarry and import spouses, except for some Eastern Asian groups (where women are more likely to intermarry). Although men have been shown to be much more prone to spouse import than

women, the intermarriage proposition was partly disconfirmed by the empirical analyses, showing that the average female of the immigrant population in Norway is more likely to intermarry than the average male. The finding contrasts both with a lot of earlier research and with the expectations of the explanatory mechanisms suggested. What can account for this?

To a considerable degree, this is a result of my exclusion of all those imported to Norway as a spouse, a group for which the *sex ratio* was very skewed towards women. Previous analyses (Kulczycki and Lobo 2002; Gonzalez-Ferrer 2006) have found that men's relatively higher probability of intermarriage is significantly reduced and even disappears when controlling for sex ratio. What I have found is that among those immigrants marrying while living in Norway, there are more men than women – and thus not only do men to a larger degree than women choose to marry endogamously – but among those selecting a spouse from within the same national-origin group, men tend to import spouses to a larger degree than do women.

Although this general reversal of the expected gender pattern is seen, there is some evidence that the *patriarchal mechanism* may be at work. First, some groups display more endogamy for women despite the fact that they are outnumbered many to one by men of the same national group: Iraq (3% of women and 17% of men are married to a majority Norwegian), Algeria and Tunisia (men are twice as exogamous). Second, some of the highly endogamous countries around which Norwegian debate about "traditional" gender norms has been most intense (Pakistan, Turkey, Iraq, Morocco) present us with a clear tendency for women to be more endogamous than men (see Table 8.3). Owing to the logic of the patriarchal mechanism, individuals adhering to a more traditional view of gender roles and norms will frequently disapprove of women finding a spouse outside of the group, and specifically outside of her religious faith (Van Tubergen and Maas 2007: 1071). As seen in Chapter 3, this is often assumed to be a factor prohibiting Muslim women from intermarriage (Vogt 2005: 115; Kulczycki and Lobo 2002: 209). Table 8.3 shows that the gender pattern of the largely non-Muslim groups is very different: Indian and Danish women and men are equally likely to intermarry with majority Norwegians, while Vietnamese women are distinctively more prone to find a majority spouse than Vietnamese men.

Just as with educational level, age at marriage affects the difference between genders in intermarriage and spouse import rates. Chapter 6 reported that holding age at marriage

constant increases the differences between the sexes as to whether they marry outside of their group. Chapter 7 showed that holding age at marriage constant increases the differences between the sexes as to whether they import a spouse or not. Both of these tendencies follow the same fundamental principle: women marry systematically earlier than men (around two years of difference for most groups, see Tables 5.5 and 5.6). Because age at marriage is positively associated with intermarriage, and negatively associated with spouse import – this strengthens both the lower probability of male exogamy and the higher probability of male spouse import. However, again the mechanism is not clear: women may tend to marry early and intermarry less regardless of each other – possibly because of gender norms and possibly because of the endogenous preferences of women themselves.

Table 8.3 Summary of results, 5 national-origin groups: intermarriage*

Variable	Vietnam	Pakistan	India	Turkey	Morocco	Denmark
Educational level	**+**	+	**+**	**+**	+	÷
Gender	**+** Women	**+** Men	**=**	**+** Men	**+** Men	**=**
Generation	**+** Descendants	(+ Immigrants)	(+ Immigrants)	(+ Descendants)	**+** Immigrants	**+** Descendants
Age at marriage	**+**	**+**	**=**	**+**	**=**	**÷**

*Answers in bold signify a relatively strong relationship, answers in brackets signal that the relationship is non-significant.

Hypothesis 3b proposed that the effect of educational level on the probability of intermarriage is more forceful for women than for men, in particular for descendants. This hypothesis was largely confirmed by the analyses of Chapter 6. Although the most vivid example of this is illustrated in Figure A6.1, the tendency is also found (although to a lesser extent) in the separate analyses of descendants (Table 6.3 and Figure 6.3) – but not for immigrants. In fact, for the latter group, educational level is more important for men than for women. This thus only partly confirms the expectations of the *divergence in freedom* mechanism. Based on the premise that women from the immigrant population have much lower activity rates both in sports and other organized leisure, (Løwe 2008; Vestel 2007: 151), as well as participation in civil society (Hagelund and Loga 2009: 81), this mechanism posits that there are gender differences in the opportunities to meet members of the majority population among young immigrants and descendants. Thus, educational institutions may be more important for women of minority background than for men. The fact that the expected gender difference appears in particular so for descendants is predicted by the universities as

marriage market mechanism – because of the fact that they are more likely than immigrants to have attended Norwegian universities to reach their educational level.[54]

In sum, the gender differences in spouse selection found here are not subject to swift generalizations. However, sex ratio seems to be an important explanation of gender differences in spouse selection, while the lower age at marriage and higher importance of educational level for the intermarriage of women might indicate less freedom to intermarry with men from the majority population. This may in turn account for the fact that some national-origin groups display significantly more intermarriage among men than women.

8.1.4 Straight lines and curved lines

The classical assimilation theory of Gordon (1964) suggested that the incorporation of minority groups in society was conceivable as a straight temporal line – and that each generation would thus intermarry more than their parents. *Hypothesis 4a* predicts that descendants will intermarry more and import spouses less than immigrants. Chapter 6 shows that the first claim is confirmed in some of my analyses and disconfirmed in others. Likewise, Chapter 7 displays a tendency that being an endogamous descendant actually raises the probability of having imported a spouse – but some groups displaying the opposite pattern. How do these findings match with the mechanisms proposed for this relationship?

Both the *convergence mechanism* and the *identity mechanism* are partly confirmed by the findings of chapter 6. The fact that descendants are on average more similar to majority Norwegians than immigrants across several measures increases their chance of intermarrying *tout court*. Many descendants have attended kindergartens, schools and tertiary education in the receiving society, with peers of majority background. They thus have more opportunities for contact with the majority population than immigrants. They are (although to varying degrees) socialized in the culture of the host society, watching the same television shows, doing sports and participating in many other leisure activities with majority Norwegians (Øia and Vestel 2007: 172). We have seen evidence that although many descendants still identify as "foreigner" or "immigrant", there is reason to believe that the fact that they *feel* more

[54] As noted in Chapter 6, although the magnitude of this difference is larger than that seen for immigrants, it is not statistically significant at all educational levels. It is likely that a larger number of observations would vindicate this.

Norwegian than their parents can result in higher rates of intermarriage with the population of majority background. Thus, despite the fact that the descendants in my sample have lower levels of education (and lower marital age) at average than immigrants, their relative likeness may breed more liking towards and from members of the majority population.

However, the convergence and identity mechanisms also involved the assumption that descendants are less committed to traditional norms and expectations originating in their country of origin. Because spouse import is considered a traditional choice of spouse, the empirical expectations were that descendants would import less than immigrants at average. What is the explanation of this divergence between expectations and results?

Table 8.4 Summary of results, 5 national-origin groups: spouse import*

Variable	Vietnam	Pakistan	India	Turkey	Morocco
Educational level	**÷**	(+)	(÷)	(÷)	**÷**
Gender	**+** Men	**+** Men	**+** Men	**+** Men	**+** Men
Generation	(+ Descendants)	**+** Immigrants	**=**	**+** Immigrants	**+** Descendants
Age at marriage	+	**-**	**-**	**-**	**-**

*Answers in bold signify a relatively strong relationship, answers in brackets signal that the relationship is non-significant.

Again, age at marriage plays a role. The analyses of Chapter 6 displayed that if you compare immigrants and descendants at the same age, descendants are much more exogamous – and their higher probability of importing a spouse is reduced (albeit not by far eliminated). Because age is positively associated with intermarriage and negatively associated with spouse import, the estimates of differences between generations will be biased without control for age at marriage. In the extension of this finding, what probably accounts for some of the patterns of descendants' spouse selection uncovered is the fact that the demographic cross-section of descendants included in these analyses is heavily skewed in favour of the early married – because large proportions of descendants have not yet married as of 2002. Thus, there is a problem of cohort-selection. As suggested by Daugstad (2009), there is reason to suspect more intermarriage among the coming cohorts of marriages among descendants – because they will have higher levels of education and higher average age at marriage.

My findings also suggest that the importance of higher education (bracketing age at marriage) may signal that as more descendants marry (i.e. those whose educational careers are not over yet), the degree of exogamy will increase, and there will be less spouse import.

However, whether this will generate spouse import rates that are lower than those of immigrants cannot be concluded on the basis of my analyses: although the higher probability of importing a spouse for descendants is reduced by control for age at marriage, it is not by any means eliminated – and educational level *is* held constant in the analyses.

Hypothesis 4b proposes that educational level is more strongly associated with intermarriage for descendants than for immigrants. This is confirmed by the empirical results. The hypothesis was generated principally by the *tipping point* mechanism and the *universities as marriage market* mechanism. The logic of the tipping point mechanism is based on the same fact as the convergence mechanism: that there is less difference towards the majority for descendants *while holding educational level constant*. Thus, descendants and their peers in the majority population are more similar along some of the crucial variables predicting attraction (e.g. similarity of taste, language and values) – and their probability of within the field of "eligibles" among majority Norwegians is comparably high. The tipping point is reached when educational level also matches – making the likeness between the descendant and the majority Norwegian high enough to enable coupling.

Further, we have seen that the fact that institutions of higher education can function as local marriage markets is probably part of the explanation why educational level often influences intermarriage rates. The power of this explanation, however, is strengthened by the empirical finding that education impacts more forcefully on the intermarriage probability of descendants than that of immigrants. Because descendants following higher education tracks are more likely to do this in Norway than immigrants, the *universities as marriage markets* mechanism is more likely to operate for descendants than for immigrants. Paradoxically, this might also be part of the explanation why having achieved higher education reduces the spouse import probability of descendants more than that of immigrants: the likelihood of them having already met a spouse in connection with being a university or college student is higher than that of immigrants – whose spouse in turn actually may be someone met at an educational institution in their country of origin (this is speculation unrelated to the analyses, which show that educational level lowers the probability of spouse import for immigrants as well as descendants).

Given that low educational attainment of both oneself and ones parents are correlated with endogamy, import and early marriage (Daugstad 2009), we can expect that descendants

marrying later will display more exogamy and less import. There is some evidence that the rates of transnational marriages are decreasing for some groups, e.g. Turkish and Pakistani descendants (Daugstad 2008). Importantly, the rates at which these groups have married at all are very different: while many of Pakistani background have entered matrimony, few with Vietnamese parents have. Overall, many descendants postpone marriage these days (Daugstad 2008: 55). Thus, the final assessment of Gordon's (1964) "straight-line" hypothesis concerning generation and intermarriage must wait.

8.1.5 Marital age and independence

We have seen that age at marriage is a confounding element in the relationship between several of the other independent variables and spouse selection, and its influence on intermarriage and spouse import patterns is already discussed to the extent that there is little left to be said here. By itself, age at marriage has been shown to have a positive association with intermarriage, and a negative association with spouse import – amounting to a clear-cut confirmation of *hypothesis 5*. Figuring as the principal explanatory mechanism for these relationships is the *parental influence* mechanism, which suggests that parents have more influence on the decision of a spouse if their children get married at young age, and parents' preferences will tend to be endogamous (Kalmijn 1998). The last section of Chapters 6 and 7 showed that age at marriage has most forceful influence on both the intermarriage propensity and the spouse import inclinations of Pakistanis and Turks. Thus, for these national-origin groups, their high probability of marrying endogamously and importing a spouse is significantly related to their relatively earlier marital age. This corroborates previous research (Kalmijn and Van Tubergen 2010: 467) which argues that those coming from a country with tradition of early marriages are more likely to marry within their group.

8.2 Further research

The closing moments of work with this thesis are fraught with the experience of having opened a field of discovery rather than nailed down abiding knowledge about spouse selection in Norway. Clearly, there are vast amounts of research waiting to be done on intermarriage and spouse import among immigrants and descendants. This section points out some of the puzzles raised in this study which requires further investigation.

First, future research should distinguish between more national-origin groups. The analyses of what influences intermarriage and spouse import for separate groups have shown that the importance of factors varies greatly. Some of my regional collections of national-origin groups conceal manifest differences in spouse selection rates, and there is reason to expect the importance of influencing factors to vary as well.

Second, there is the status exchange hypothesis. My analyses have presented evidence that status exchange *may* be at work in the intermarriages of Norway. However, to draw conclusions about this phenomenon, the educational level of the majority spouse should be accounted for (as noted in Chapter 3), as the hypothesis strictly speaking involves the assumption that the majority spouse has *only* her "ethnic status" to exchange (for the educational status of the minority spouse). To test this, log-linear models should be utilized cross-checking the educational status of all "mixed" couples in which one partner is of "non-western" origin (cf. Kalmijn and Van Tubergen 2006).

Third, there is the role of demographic and cultural group characteristics in the national-group variation of intermarriage and spouse import. This study has demonstrated that there remains a vast amount of disparity between national-origin groups, controlling for my individual-level variables. However, as shown by Kalmijn and Van Tubergen (2010), group characteristics can be decomposed and assessed across different origins, and have impressive predictive value when it comes to the spouse selection of different groups. A multi-level design modeled after their study would enable an assessment of the relative importance of different types of group characteristics, and could help dissect the "black box" of national-origin group.

Fourth, and related to this, there should be a closer inspection of the role of residential segregation. My analyses have shown that living in Oslo impacts negatively on intermarriage, which indicates that there is more opportunity for meeting other immigrants in this metropolitan area than elsewhere in Norway. Living in Oslo is also associated with less spouse import for Pakistanis, Indians and Moroccans – but not for Vietnamese and Turks. Is this enlightened by the residential patterns of these groups? Residential segregation has been showed to be a fertile ground for a "local marriage market" elsewhere (Kalmijn, 1998: 403; Heaton and Jacobson 2000). This relationship should be scrutinized further, in particular by decomposing the different areas of Oslo.

Fifth, actually *explaining* the spouse selections reviewed in this thesis should be pursued further. The theoretical strategy of this study was inspired by the idea of mechanism-based explanations, programmatic of *analytical sociology*. As noted by Manzo (2010), through simulating the social processes believed to generate the statistical patterns discovered, we may come closer to an understanding of the mechanisms that can explain these outcomes. Thus, an agent-based model simulating the spouse selection of immigrants and descendants should bring us closer to actually evaluating the validity of mechanisms proposed in this thesis.

Finally, I suggest that we should take the essentially *two-sided* aspect of spouse selection more seriously. In research on intermarriage, this would involve scrutinizing the group of majority Norwegians engaged in a relationship with someone from the immigrant population. What makes them prone to engage in intermarriage? How do they end up choosing a minority Norwegian as a spouse? As I have suggested above, through being the most direct measure of the opportunity of intermarriage from the perspective of immigrants and descendants, the spouse preferences of the majority population may be more important in the explanation of intermarriage than that assumed in most of the literature to this date.

References

Alba, R. (2005). “Bright vs. blurred boundaries: Second-generation assimilation and exclusion in France, Germany and the United States”. Ethnic and Racial Studies Vol. 28 No. 1 January 2005 pp. 20-49

American Sociological Association. (2003). *The Importance of Collecting Data and Doing Social Scientific Research on Race.* Washington, DC: American Sociological Association.

Andersen, E.B. (1997). Introduction to the Statistical Analysis of Categorical Data. Springer-Verlag.

Andersen, K and Tybring-Gjedde, C. (2010). "Drøm fra Disneyland". *Aftenposten*. http://www.aftenposten.no/meninger/kronikker/article3783373.ece. Retrieved 27 August 2010.

Angrist, J. (2002). "How Do Sex Ratios Affect Marriage And Labor Markets? Evidence From America'S Second Generation," The Quarterly Journal of Economics, MIT Press, vol. 117(3), pages 997-1038

Barth, E, B. Bratsberg, & O. Raaum (2004). "Identifying earnings assimilation of immigrants under changing macroeconomic conditions" *Scandinavian Journal of Economics* 106 (1):1-22.

Bean, F. D. and G. Stevens. (2003). “The New Immigrants and Theories of Incorporation”. Chapter 5 in America’s Newcomers and the Dynamics of Diversity. Russell Sage Foundation, New York.

Birkelund G.E. and L. A. Goodman (1997). “Birds of a feather flock together. The association between husband’s and wife’s occupation in Norwegian two-earner families”. In Grønmo S, Henrichsen B, red. *Society, university and world community. Essays for Ørjar Øien*. Oslo: Universitetsforlaget, 1997.

Birkelund, G.E. and J. Heldal (2003). ”Who marries whom? Educational homogamy in Norway” in Demographic Research, Vol. 8.

Birkelund, G.E. and A. Mastekaasa (2009), "Innledning ". In Gunn, Birkelund, og Arne Mastekaasa (red.) *Integrert? innvandrere og barn av innvandrere i utdanning og arbeidsliv*. (11-42) Oslo: Abstrakt forlag

Blau, P. M., C. Beeker, and K. M. Fitzpatrick. (1984). “Intersecting Social Affiliations and Intermarriage.” *Social Forces* 62585-606.

Blau, P. M., T. C. Blum, and J. E. Schwartz. (1982). “Heterogeneity and Intermarriage.” *American Sociological Review* 47:45-62.

Blom, S. og K. Henriksen (2008): *Levekår blant innvandrere i Norge 2005/2006,* Rapporter 2008/5, Statistisk sentralbyrå.

Blossfeld, H.-P. and A. Timm (Eds) (2003), *Who Marries Whom? Educational Systems as Marriage Markets in Modern Societies.* Dordrecht: Kluwer Academic Publishers

Bredal, A. (2005): “Arranged marriages as a multicultural battle field” (2005) i *Youth, Otherness, and the Diverse City: Modes of Belonging and Social Life*, edited by Lithman & Andersson, Daidalos

Brekke, I. (2008). *Like muligheter? Betydningen av etnisk bakgrunn for sysselsetning og inntekt.* Doctoral Thesis, Department of Sociology and Human Geography, University of Oslo.

Brekke, I., and A. Mastekaasa (2008): "Highly educated immigrants in the Norwegian labour market: permanent disadvantage?" *Work Employment Society* 22 (3):507-526.

Brochmann, G. & Kjeldstadli, K. *(*2008). *A history of immigration. The case of Norway 900-2000.*. Universitetsforlaget

Byrne, D. (1971). *The Attraction Paradigm*, New York: Academic Press

Çelikaksoy A., L. Nekby & S. Rashid, (2009). "Assortative Mating by Ethnic Background and Education in Sweden: The Role of Parental Composition on Partner Choice," SULCIS Working Papers 2009:7, Stockholm University Linnaeus Center for Integration Studies

Chan, T.W., K. Aas, G. Birkelund and Ø. Wiborg (2010): “Social Status in Norway”. European Review of Sociology 26:5.

Coontz, S. (2004). “The *world historical transformation of marriage*”,. Journal of *Marriage* and Family, vol. 66, no. 4, pp. 974-979.

Christophersen, K.(2009), *Databehandling og statistisk analyse med SPSS.* 4.utgave. Oslo: Unipub

Davidson, D. (2001*) Essays on Actions and Events*. Clarendon: Oxford University Press

Daugstad, G. (2008) *Ekteskap over landegrensene. Ekteskapsmønster og transnasjonale familieetableringar i perioden 1990-2007*. SSB-rapport 2008/41

Daugstad, G. (2009) *Søker krake make? Ekteskap og pardannelse blant unge med bakgrunn fra Tyrkia, Pakistan og Vietnam.* Rapport 2009/33. Statistisk sentralbyrå.

Dribe, M. & *Lundh*, C. (2008) "*Intermarriage* and Immigrant *Integration* in Sweden." Acta Sociologica 51: 329–. 354.

Eide, E. and A. H. Simonsen (2007). *Mistenkelige utlendinger: minoriteter i norsk presse gjennom hundre år*. Kristiansand, Høyskoleforl.

Elster, J. (1989). *Nuts and Bolts for the Social Sciences,* Cambridge University Press

Elster, J. (2007). *Explaining* Social. Behaviour: More Nuts and Bolts for the Social Sciences. Cambridge: Cambridge. University Press.

Epstein, E. and R. Guttman (1984) "Mate selection in man: evidence, theory, and outcome." Social Biology 1984 Fall-Winter;31(3-4):243-78.

Fangen, K. , F. Mohn and Fossan, K. (eds) (2010*). Inclusion and Exclusion of Young Adult Immigrants: Barriers and Bridges.* London*:* Ashgate .

Forgaard, T. (2006) "Innvandrerbefolkningen flytter oftere til sentrale strøk" Samfunnsspeilet nr. 4, 2006

Fryer, R. (2007) Guess Who's Been Coming to Dinner? Trends in Interracial Marriage over the 20th Century. *Journal of Economic Perspectives,* Spring 2007.

Gonzalez-Ferrer, A. (2006): "Who do immigrants marry? Partners' Choice among Single Immigrants in Germany", E*uropean Sociological Review* 22: 171-185.

Gordon, M. (1964*). Assimilation in American life*: *The role of race, religion, and national origin* New York : Oxford University Press.

Gshur, B.and B.S. Okun. (2003). "Generational effects on marriage patterns: Four decades of Jewish immigrants and their descendents in Israel." *Journal of Marriage and the Family* 65(2):287-301.

Hagelund, A. and Loga, J. (2009). Frivillighet, innvandring, integrasjon. En kunnskapsoversikt, 2009-1. Oslo/Bergen: Senter for forskning på sivilsamfunn og frivillig sektor.

Hansen, M. N. (2000): "Høyere utdanning og utbytte - hva betyr utenlandsk opprinnelse for inntektsnivå?" *Søkelys på arbeidsmarkedet* 17:223-234.

Hansen M. N. (2002). Sosial status og ekteskap innenfor legestanden Tidsskrift for den Norske Lægeforening; 122: 1881–4.

Hallvik, J. (2009), "Skoleprestasjoner blant grunnskoleelever med en norskfødt og en utenlandsfødt forelder". I Gunn E, Birkelund og Arne Mastekaasa (red.) *Integrert? innvandrere og barn av innvandrere i utdanning og arbeidsliv. (*45-59) Oslo: Abstrakt forlag

Heaton, T. B. and Jacobson, C. K. (*2000*), Intergroup Marriage: An Examination of Opportunity Structures. Sociological Inquiry, 70: 30–41

Hedström, P. and R. Swedberg (eds.) (1998) *Social Mechanisms: An Analytical Approach to Social Theory*. Cambridge: Cambridge University Press,.

Hedström , P. (2005) *Dissecting the Social: On the Principles of Analytical Sociology*. Cambridge University Press,.

Hedström , P. and P. Bearman (Eds.) (2009) *The Oxford Handbook of Analytical Sociology*. Oxford: Oxford University Press,.

Henriksen, K. (2009) ”Konklusjon – mer like enn ulike”, i Henriksen, Kristin (red.) *Unge som innvandret før skolealder – hvor like er de norskfødte med innvandrerforeldre?* Notat 2009/35, (18-27) Lesedato:01.05.2010. URL: *http://www.ssb.no/emner/00/02/notat_200935/notat_200935.pdf*

Henriksen, K. (2010): Familieinnvandring og ekteskapsmønster 1990-2008, Rapporter 2010/10, Statistisk sentralbyrå.

Hernes, G. and K. Knudsen (1992): "Norwegians' Attitudes Toward New Immigrants", pp. 123-139 in Acta Sociologica, Vol 35.

Hoem, J. M. (2008) ”The reporting of statistical significance in scientific journals” *Demographic Research*, vol. 18, issue 15, pages 437-442

Holst, C. (2009): "What is Philosophy of Social Science?", International Studies in the Philosophy of Science, vol. 23, 3/2009, p. 313-321

Huntington, S. (2004). “The Hispanic Challenge”. Foreign Policy March/April: 30-45

Hwang, S.-S.and R. Saenz. (1990). "The problem posed by immigrants married abroad on intermarriage research: The case of Asian Americans." *International Migration Review* 24(3):563-576.

Hwang, S.-S., R. Saenz, and B. Agquirre. (1997). "Structural and assimilationist explanations of Asian American intermarriage." *Journal of Marriage and Family* 59:758-772.

Høydahl, E. (2008): Vestlig og ikke-vestlig – ord som ble for store og gikk ut på dato, i Samfunnsspeilet 4/2008.

Jacobs, J.A.and T.G. Labov. (2002). "Gender Differentials in Intermarriage Among Sixteen Race and Ethnic Groups." *Sociological Forum* 17:621-646.

Kalmijn, M. (1991). "Trends in Religious and Educational Homogamy." *American Sociological Review,* 56: 786-800.

Kalmijn, M. (1993). "Trends in Black/White Intermarriage." *Social Forces,* 72(1): 119-146.

Kalmijn, M. (1998). "Intermarriage and homogamy." *Annual Review of Sociology*, 24, 395-421.

Kalmijn, M., & H. Flap. (2001). "Assortive Meeting and Mating: Unintended Consequences of Organized Settings for Partner Choices." *Social Forces*, 79: 1289-1312.

Kalmijn, M., P.M. de Graaf & J.P.G. Janssen. (2005). "Intermarriage and the risk of divorce in the Netherlands: The effects of differences in religion and in nationality, 1974-1994." Population Studies, 59, 1, 71-85.

Kalmijn, M. and F. van Tubergen. (2006). "Ethnic intermarriage in the Netherlands" Confirmations and refutations of ac)cepted insights." European Journal of Population, 22, 371-397.

Kalmijn, M. (2009). " Consequences of racial intermarriage for children's social integration. " Sociological Perspectives, forthcoming.

Kalmijn, M. & F. Van Tubergen. (2010). " A Comparative Analysis of Intermarriage of 94 National Origin Groups in the United States. " Demography, forthcoming.

Kavli, H. C. (2004), "Familiepolitiske dilemmaer i det fleretniske samfunnet" i Ellingsæter & Leira (red.) *Velferdsstaten og familien.* Oslo: Gyldendal

Kertzer, D. and Arel, D. (2002). *Census and identity – The politics of race, ethnicity, and language in national censuses.* Cambridge: Cambridge University Press.

Kravdal Ø, Noack T. (1989) "Like marries like – the safest choice? A brief study of homogamy and heterogamy in Norwegian marriages". Scandinavian Population Studies 1989; 9: 243–58.

Kulczycki, A. and Lobo, A. P. (2002), "Patterns, Determinants, and Implications of Intermarriage Among Arab Americans". Journal of Marriage and Family, 64: 202–210.

Landale, N. S. and S. E. Tolnay. (1993). "Generation, Ethnicity and Marriage: Historical Patterns in the Northern United States." Demography 30(1): 103-126.

Laurence, J. (2006), "Managing Transnational Islam: Muslims and the state in Western Europe". In Parson and Smeeding (Eds.) *Immigration and the transformation of Europe*. Cambridge University Press, 2006

Lie, B. (2004): Ekteskapsmønstre i det flerkulturelle Norge, Statistisk sentralbyrå rapport 2004/1. Oslo Statistisk sentralbyrå.

Lieberson, S.and M. Waters. (1988). *From many strands: Ethnic and racial groups in contemporary America*. New York: Russel Sage Foundation.

Lievens, J. *(*1998*).* *"*Interethnic marriage: Bringing in the context through multilevel modelling*"* European Journal of Population, 14, 117–155.

Lucassen, L. and C. Laarman, (2009) 'Immigration, intermarriage and the changing face of Europe in the post war period', *History of the family* 14:1 52-68

Lyngstad, T. H. (2009) "Fri flyt av kapital? En kommentar til begrepsbruk i sosiologi og annen samfunnsvitenskap", *Sosiologisk tidsskrift* 17(3): 261-272.

Lyngstad, T. H. and Jalovaara, M. (2010). "A review of the antecedents of union dissolution". Demographic Research. ISSN 1435-9871. *vol. 23*, s 257 – 292

Løwe, T. (2008). *Living Conditions of Youth of Immigrant Origin. Young people who have grown up in Norway with parents from Pakistan, Turkey or Vietnam*, Report 2008/51. Available at: http://www.ssb.no/english/subjects/00/02/rapp_200851_en/.

Manzo, G. (2010): "Analytical Sociology and Its Critics", European Journal of Sociology, 51: 129-170 Cambridge University Press

Mare, R.. (1991). *"*Five Decades *of Educational Assortative Mating." American Sociological Review 56(1):15–32.*

McPerson, M., L. Smith-Lovin and J. Cook (2001) "Birds of a feather: Homophily in social networks". Annual Review of Sociology 2001. 27:415-44

Merton, R. K. (1964). *"*Intermarriage and the social structure: Fact and theory*." In R. Coser (Ed.), The family: Its structure and function (pp. 128-152).* New York*:* St. Martin's.

Merton, R. K. (1968). "Continuities in the Theory of Reference Groups and Social Structure." Pp. 335–440 in *Social Theory and Social Structure*, edited by Robert K. Merton. New York: Free Press.

Myers, D. G. (2008). *Social Psychology* (9 th ed.). Boston: McGraw-Hill

Noack, T. (2001). "Cohabitation in Norway: An accepted and gradually more regulated way of living". International Journal of Law, Policy and the Family, 15, Number 1, April 2001 , pp. 102-117(16)

Noack T. (2010): En stille revolusjon: Det moderne samboerskapet i Norge, Ph.D thesis, Universitetet i Oslo, Institutt for sosiologi og samfunnsgeografi

Norwegian Broadcasting Corporation (2010) "Siste utbrett". 26 August 2010. http://www.nrk.no/nett-tv/indeks/226708/. Retrieved 27 August 2010.

Okamoto, D.G. (2007). "Marrying out: A boundary approach to understanding the marital integration of Asian Americans." *Social Science Research* 36(4):1391-1414.

Olsen, B. (2008) *Unge innvandrere i arbeid og utdanning. Er innvandrerungdom en marginalisert gruppe?*, Statistics Norway 2008 http://www.Statistics Norway.no/ssp/utg/200604/10/

Pagnini, D.L.and S.P. Morgan. (1990). "Intermarriage and social distance among U.S. immigrants at the turn of the century." *American Journal of Sociology* 96:405-432.

Pawson, R. (1989) *A Measure for Measures: A Manifesto for Empirical Sociology*, Routledge: London.

Pedersen, P. J., Pytlikova, M., and Smith, N. (2006). "Migration into OECD countries 1990-. 2000". In Parson and Smeeding (Eds.) *Immigration and the transformation of Europe*. Cambridge University Press, 2006

Petersen, T. (2006): "Motive and cognition. Conscious and unconscious processes in employment discrimination". In Elster, J., Gjelsvik, O., Hylland, Aa. & K. Moene (red.): *Understanding Choice, Explaining Behaviour. Essays in Honour of Ole-Jørgen Skog*. Unipub Forlag/Oslo Academic Press 2006.

Pettersen, S.V. (2003): Bosettingsmønster og segregasjon i storbyregionene. Ikke-vestlige innvandrere og grupper med høy og lav utdanning. Utredninger til Storbymeldingen, del 1, Notater 2003/33, Statistisk sentralbyrå.

Porter, J. (1965): *The Vertical Mosaic: An Analysis of Social Class and Power in Canada*. Toronto: University of Toronto Press.

Qian, Z.and D.T. Lichter. (2007). "Social boundaries and marital assimilation: Interpreting trends in racial and ethnic intermarriage." *American Sociological Review* 72:68-94.

Ringdal, K. (2001) *Enhet og mangfold – Samfunnsvitenskapelig forskning og kvantitativ metode*, Bergen: Fagbokforlaget

Rogstad, J. (2000). *Mellom faktiske og forestilte forskjeller: Synlige minoriteter på arbeidsmarkedet*. Oslo, Institutt for samfunnsforskning.

Rubin, A. (1985) "Significance Testing with Population Data" *The Social Service Review*, Vol. 59, No. 3 (Sep., 1985), pp. 518-520

Røed, K. and Raaum, O. (2003): "Administrative Registers - Unexplored Reservoirs of Scientific Knowledge?", *Economic Journal* , vol 113, f258-f281

Schwartz, C. R. and R. D. Mare. (2005). "Trends in Educational Assortative Marriage From 1940 to 2003." *Demography* 42:621-646.

Skog, O. (2007): *Å forklare sosiale fenomener: En regresjonsbasert tilnærming*. Oslo: Ad Notam Gyldendal.

Song, M. (*2009*): "Is *Intermarriage* a Good Indicator of Integration?" Journal of Ethnic and Migration Studies 35(2): 331-348.

Støren, L. A. (2005) ”Ungdom med innvandrerbakgrunn i norsk utdanning – ser vi en framtidig suksesshistorie?” i *Utdanning 2005: Deltakelse og kompetanse*. Pp 70-97 Oslo: Statistics Norway.

Statistics Norway (2001) ”Utdanningsstatistikk. Innvandrernes utdanningsnivå, per 1. oktober 2001” at http://www.ssb.no/emner/04/01/utinnv/

Statistics Norway (2002) ”Hver femte i Norge har høyere utdanning” http://www.ssb.no/emner/04/01/utniv/arkiv/

Statistics Norway (2009) “Fleire medlemmer i livs- og trossamfunn” at http://www.ssb.no/trosamf/

Surén, P., A. Grjibovski and C. Stoltenberg (2007). *Inngifte i Norge. Omfang og medisinske konsekvenser.* Rapport 2007:2 Nasjonalt folkehelseinstitutt

Sørensen, A. B. (1998). Theoretical mechanisms and the empirical study of social processes. P. Hedstrom, R. Swedberg, eds. *Social Mechanisms: An Analytical Approach to Social Theory*. Cambridge University Press, New York, 238-266.

Trilla, C. C., Esteve, A. and Domingo, A. (2008), Marriage Patterns of the Foreign-Born Population in a New Country of Immigration: The Case of Spain. International Migration Review, 42: 877–902.

Tuastad, D. (2008) *A Comparative Study on the Role of Kinship in Palestinian Local Politics.* Dissertation for the Ph.D. degree, Department of Social Anthropology: University of Oslo

Tufte, P. (2000): En intuitiv innføring i logistisk regresjon. Arbeidsnotat nr. 8 2000. Statens institutt for forbruksforskning SIFO.

Van De Kaa D. J. (1987) Europe's second demographic transition. Population Bulletin. 1987 Mar;42(1):1-59.

Van Tubergen, F.and I. Maas. (2007). "Ethnic intermarriage among immigrants in the Netherlands: an analysis of population data." *Social Science Research* 36:1065-1086.

Vestel, V. (2007). Hybridisering, likhet og begjær. Noen analytiske utfordringer for forståelsen av det flerkulturelle. in Fuglerud, Øyvind and Thomas Hylland Eriksen (red). Grenser for kultur? Perspektiver fra norsk minoritetsforskning. Oslo: Pax Forlag.

Vogt, K. (2005). *Islam*: *Tradisjon, fundamentalisme og reform*. Oslo: Cappelen

Weber, M. (1962): *Basic concepts of sociology*. Translated by H.P Secher. The Citadel Press Found online at: http://www.ne.jp/asahi/moriyuki/abukuma/weber/method/basic/basic_concept_frame.html

Weber, M. (1978), *Economy and Society. An Outline of Interpretive Sociology*, edited by Roth, G. and Wittich, C., Berkeley: University of California.

Wiik, K. Aa. (2009). "'You'd Better Wait!' - Socio-Economic Background and Timing of First Marriage Versus First Cohabitation" European Sociological Review, Vol. 25, Issue 2, pp. 139-153, 2009.

Wiik K.Aa. (2010): *Whether, when and with whom? Socioeconomic inequalities in marriage and cohabitation in Norway*, Ph.D thesis, University of Oslo

Xie, Y. and K. Goyette. (1997). "The Racial Identification of Biracial Children with One Asian Parent: Evidence from the 1990 Census."*Social Forces* 76(2):547-570.

Yancey, G. 2002. "Who Dates Interracially: An Examination of the Characteristics of Those Who Have Dated Interracially." *Journal of Comparative Family* Studies 33:179-90.

Øia, T. and Vestel, V. (2007) *Møter i det flerkulturelle,* NOVA rapport no. 21.

Østby, L. (red) (2004*)*: *Innvandrere i Norge. Hvem er de, og hvordan går det med dem?* Del 1: demografi. SSB-notat *2004*: 65

All references used in this thesis are reported above. The text includes 39,507 words, counting all tables, footnotes and in-text references.

Appendices

A: Multinomial logit models of intermarriage. All immigrants and descendants

Model	1		2		3		4	
	Majority	Minority	Majority	Minority	Majority	Minority	Majority	Minority
Educational level								
Primary (Ref.)								
Lower secondary	0,151 **	0,162 ***	0,042 ns	0,150 **	0,100 ***	0,154 ***	0,031 ns	0,154 **
Higher secondary	0,546 ***	0,430 ***	0,329 ***	0,357 ***	0,499 ***	0,451 ***	0,301 ***	0,372 ***
Lower tertiary (BA)	1,160 ***	0,823 ***	0,811 ***	0,646 ***	1,380 ***	0,979 ***	1,007 ***	0,784 ***
Higher tertiary (MA)	1,294 ***	1,159 ***	0,891 ***	0,910 ***	1,517 ***	1,227 ***	1,025 ***	0,944 ***
Unknown	0,625 ***	0,500 ***	0,480 ***	0,503 ***	0,570 ***	0,467 ***	0,450 ***	0,477 ***
Place of residence								
Outside Oslo (Ref.)								
Oslo	-0,709 ***	-0,111 **	-0,715 ***	-0,103 **	-0,709 ***	-0,108 ***	-0,714 ***	-0,101 **
Unknown	-0,299 ***	-0,356 ***	-0,090 ns	-0,118 ns	-0,303 ***	-0,360 ***	-0,097 **	-0,125 **
Descendant	0,129 ***	-0,019 ns	0,605 ***	0,334 ***	-0,281 **	-0,282 *	0,357 ***	0,106 ***
Age at marriage			0,072 ***	0,052 ***			0,072 ***	0,052 ***
Age at marriage^2			-0,008 ***	-0,001 ***			-0,007 ***	-0,001 ***
Male	-0,690 ***	-0,265 ***	-0,870 ***	-0,430 ***	-0,575 ***	-0,197 ***	-0,779 ***	-0,368 ***
Male*Lower secondary					-0,011 ns	-0,006 ns	-0,047 ns	-0,009 ns
Male*Higher secondary					-0,080 ns	-0,152 *	-0,045 ns	-0,120 ns
Male*Lower tertiary (BA)					-0,530 ***	-0,337 ***	-0,397 ***	-0,283 ***
Male*Higher tertiary (MA)					-0,521 ***	-0,207 ns	-0,298 ***	-0,136 ns
Descendant*Lower secondary					0,350 ***	-0,003 ns	0,254 *	-0,046 ns
Descendant*Higher secondary					0,651 ***	0,516 ***	0,424 ***	0,442 ***
Descendant*Lower tertiary (BA)					0,659 ***	0,602 ***	0,237 *	0,463 **
Descendant*Higher tertiary (MA)					1,437 ***	1,357 ***	0,840 ***	1,165 ***
Intercept	-0,225 ***	-1,491 ***	0,287 ***	-1,404 ***	-0,264 ***	-1,494 ***	0,267 ***	-1,415 ***
Chi-square (*df*)	3738,476 (18)		6680,763 (22)		4120,036 (34)		6881,291 (38)	
Nagelkerke R^2	0,084		0,138		0,088		0,142	
N	*55,293*		*55,293*		*55,293*		*55,293*	

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

B: Binomial logit models of spouse import. All immigrants and descendants.

Table B7.1 Binomial logit models of spouse import. All immigrants and descendants.

Model	1	2	3	4
Educational level				
Primary (Ref.)				
Lower secondary	-0,210 ***	-0,147 **	-0,028 ns	0,014 **
Higher secondary	-0,581 ***	-0,416 ***	-0,571 ***	-0,373 ***
Lower tertiary (BA)	-0,707 ***	-0,394 ***	-0,699 **	-0,311 ***
Higher tertiary (MA)	-1,046 ***	-0,659 ***	-1,349 ***	-0,811 ***
Unknown	-0,504 ***	-0,410 ***	-0,509 ***	-0,422 ***
Place of residence				
Outside Oslo (Ref.)				
Oslo	0,242 ***	0,274 ***	0,240 ***	0,272 ***
Unknown	0,862 ***	0,645 ***	0,862 ***	0,644 ***
Descendant	1,356 ***	0,827 ***	1,419 ***	0,822 ***
Age at marriage		-0,069 ***		-0,069 ***
Age at marriage^2		0,002 ***		0,002 ***
Male	1,251 ***	1,530 ***	1,318 ***	1,619 ***
Male*Lower secondary			-0,292 ***	-0,270 ***
Male*Higher secondary			-0,033 ns	-0,099 ns
Male*Lower tertiary (BA)			0,013 ns	-0,111 ns
Male*Higher tertiary (MA)			0,367 (*)	0,162 ns
Descendant*Lower secondary			-0,016 ns	0,030 ns
Descendant*Higher secondary			0,032 ns	0,097 ns
Descendant*Lower tertiary (BA)			-0,539 **	-0,403 *
Descendant*Higher tertiary (MA)			-0,810 ns	-0,603 ns
Intercept	-0,594 ***	-0,969 ***	-0,633 ***	-0,969 ***
−2LL (*df*)	33059,095 (9)	32182,124 (11)	33042,326 (17)	32174,380 (19)
Nagelkerke R^2	0,166	0,204	0,168	0,206
N	*27,701*	*27,701*	*27,701*	*27,701*

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

C: Multinomial logit models of intermarriage, without controls for age at marriage.

Table C6.3 Multinomial logit estimates of exogamy for immigrants. Contrast: Endogamy

	Men				Women			
	Majority		Minority		Majority		Minority	
National/regional group								
South America (Ref.)								
Pakistan	-2,417	***	-1,968	***	-4,779	***	-4,033	***
Turkey	-1,152	***	-1,607	***	-2,896	***	-2,094	***
Vietnam	-3,141	***	-2,549	***	-2,649	***	-2,258	***
India	-1,295	***	-0,864	***	-1,905	***	-1,051	***
Other Asian	-1,435	***	-0,447	***	-0,124	ns	-0,342	(*)
Morocco	-0,165	*	-1,011	***	-1,615	***	-0,748	**
Other African	-0,233	*	0,026	ns	-0,813	***	-0,005	ns
Nordic countries	1,472	***	0,713	***	1,482	***	0,742	***
Western Europe	1,854	***	1,440	***	1,609	***	1,319	***
Eastern Europe	-0,374	***	0,008	ns	0,435	***	0,461	***
North America and Oceania	2,058	***	1,519	***	2,354	***	1,787	***
Educational level								
Primary (Ref.)								
Lower secondary	0,215	**	0,152	*	-0,090	ns	-0,095	ns
Higher secondary	0,299	***	0,121	ns	0,071	ns	-0,024	ns
Lower tertiary (BA)	0,463	***	0,271	***	0,527	***	0,226	*
Higher tertiary (MA)	0,358	***	0,471	***	0,693	***	0,450	**
Unknown	0,013	ns	0,160	*	0,001	ns	0,009	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo	-0,253	***	0,065	ns	-0,488	***	0,173	**
Unknown	-0,500	***	-0,226	*	-0,162	**	-0,084	ns
Length of stay								
1-2 years (Ref.)								
3-5 years	0,024	ns	-0,070	ns	0,105	*	0,091	ns
6-9 years	-0,149	ns	-1,239	***	-0,097	ns	-1,269	***
10-15 years	-0,302	***	0,010	ns	0,322	***	0,474	***
16-42 years	-0,417	***	0,580	***	0,808	***	0,960	***
Intercept	-0,149	ns	-1,239	***	-0,097	ns	-1,269	***
Chi-square (*df*)	10399,720 (44)***				7608,343 (44)***			
Nagelkerke	0,356				0,370			
N	31505				23788			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Table C6.5 Multinomial logit estimates of exogamy for descendants. Contrast: Endogamy

	Men				Women			
	Majority		Minority		Majority		Minority	
National/regional group								
South America (Ref.)								
Pakistan	-3,243	***	-0,372	ns	-5,325	***	-3,702	***
Turkey	-2,815	***	-0,985	ns	-4,191	***	-3,279	***
Vietnam	-22,355	***	-0,980	ns	-3,228	***	-2,265	**
India	-2,673	***	-1,120	ns	-2,586	***	-1,905	**
Other Asian	0,437	ns	2,210	(*)	-1,407	*	-0,526	ns
Morocco	-1,185	ns	0,196	ns	-3,824	***	-3,667	***
Other African	0,080	ns	2,288	(*)	0,500	ns	1,380	ns
Nordic countries	0,177	***	2,921	**	1,628	**	0,065	ns
Western Europe	2,798	***	3,184	**	0,754	ns	0,582	ns
Eastern Europe	1,394	*	2,274	*	-0,158	ns	0,072	ns
North America and Oceania	1,833	*	0,468	ns	1,543	*	0,333	ns
Educational level								
Primary (Ref.)								
Lower secondary	-0,143	ns	0,110	ns	0,587	*	0,185	ns
Higher secondary	0,544	*	0,450	ns	0,812	**	0,753	**
Lower tertiary (BA)	0,981	**	0,929	**	1,524	***	1,002	**
Higher tertiary (MA)	0,844	(*)	1,361	**	1,481	*	0,944	ns
Unknown	-0,864	*	0,080	ns	-0,555	ns	-0,157	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo	-1,065	***	-0,048	ns	-0,804	***	0,146	ns
Unknown	0,086	ns	-0,141	ns	0,717	**	0,426	ns
Intercept	-0,028	ns	-2,358	*	0,779	ns	-0,261	ns
Chi-square (*df*)	1534,460 (36)***				2189,175 (36)***			
Nagelkerke	0,668				0,695			
N	1825				2496			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

D: Logistic models of intermarriage and spouse import, excluding marriages occuring within two years.

Table D6.2 Multinomial logit estimates of exogamy for immigrants. Contrast: Endogamy

	Men				Women			
	Majority		Minority		Majority		Minority	
National/regional group								
South America (Ref.)								
Pakistan	-2,521	***	-2,015	***	-4,391	***	-3,798	***
Turkey	-1,121	***	-1,692	***	-2,327	***	-1,919	***
Vietnam	-3,351	***	-2,437	***	-2,396	***	-2,052	***
India	-1,481	***	-0,943	***	-1,734	***	-1,058	***
Other Asian	-1,677	***	-0,512	***	0,030	ns	-0,217	(*)
Morocco	-0,348	**	-1,130	***	-1,381	***	-0,682	**
Other African	-0,287	**	0,045	ns	-0,726	***	-0,011	ns
Nordic countries	0,122	***	0,069	***	0,135	***	0,073	***
Western Europe	2,175	***	1,721	***	1,704	***	1,465	***
Eastern Europe	-0,489	***	0,040	ns	0,613	***	0,481	***
North America and Oceania	2,175	***	1,761	***	2,336	***	1,800	***
Educational level								
Primary (Ref.)								
Lower secondary	0,135	(*)	0,205	*	-0,148	(*)	-0,008	ns
Higher secondary	0,212	**	0,165	(*)	-0,089	ns	0,023	ns
Lower tertiary (BA)	0,431	***	0,346	***	0,245	**	0,189	(*)
Higher tertiary (MA)	0,426	***	0,513	***	0,533	***	0,549	**
Unknown	-0,060	ns	0,189	*	-0,217	**	0,000	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo	-0,281	***	0,095	(*)	-0,613	***	0,148	*
Unknown	-0,530	***	-0,070	ns	-0,045	ns	0,028	ns
Length of stay								
3-6 years (Ref.)								
7-10 years	-0,258	***	0,037	ns	-0,040	ns	0,125	(*)
11-15 years	-0,168	**	0,042	ns	0,246	***	0,442	***
16+ years	0,106	ns	0,445	***	0,680	***	0,854	***
Age at marriage	-0,004	ns	0,010	*	0,063	***	0,022	ns
Age at marriage^2	-0,008	***	0,000	(*)	-0,007	***	-0,001	**
Intercept	0,214	*	-1,429	***	0,356	**	-1,236	***
Chi-square (*df*)	10188,2042541292 (46)***				6971,79946269501 (46)***			
Nagelkerke	0,412				0,423			
N	24139,000				15138,000			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

Table D6.4 Multinomial logit estimates of exogamy for descendants. Contrast: Endogamy

	Men				Women			
	Majority		Minority		Majority		Minority	
National/regional group								
South America (Ref.)								
Pakistan	-3,016	***	-0,238	ns	-5,285	***	-3,705	***
Turkey	-2,484	***	-0,747	ns	-3,907	***	-3,176	***
Vietnam	-22,155	ns	-0,863	ns	-3,155	***	-2,253	**
India	-2,666	***	-1,079	ns	-2,667	***	-1,948	**
Other Asian	0,373	ns	2,120	(*)	-1,295	*	-0,419	ns
Morocco	-1,216	ns	0,215	ns	-3,684	***	-3,636	***
Other African	-0,034	ns	2,194	(*)	0,214	ns	1,221	ns
Nordic countries	0,144	**	0,179	*	0,065	ns	0,038	ns
Western Europe	2,335	**	2,830	*	-0,102	ns	0,096	ns
Eastern Europe	1,011	ns	1,998	(*)	-0,694	ns	-0,182	ns
North America and Oceania	1,264	ns	-0,017	ns	0,835	ns	-0,082	ns
Educational level								
Primary (Ref.)								
Lower secondary	-0,331	ns	-0,016	ns	0,494	(*)	0,154	ns
Higher secondary	0,283	ns	0,191	ns	0,438	(*)	0,519	(*)
Lower tertiary (BA)	0,339	ns	0,382	ns	0,740	*	0,510	ns
Higher tertiary (MA)	0,021	ns	0,672	ns	0,254	ns	0,176	ns
Unknown	-0,807	(*)	0,077	ns	-0,748	(*)	-0,227	ns
Place of residence								
Outside Oslo (Ref.)								
Oslo	-0,971	***	0,028	ns	-0,745	***	0,173	ns
Unknown	0,675	**	0,341	ns	1,353	***	0,728	**
Age at marriage	0,176	***	0,131	***	0,210	***	0,108	***
Age at marriage^2	-0,007	**	-0,005	(*)	-0,006	**	-0,002	ns
Intercept	0,414	ns	-1,977	(*)	1,360	*	0,116	ns
Chi-square (*df*)	1593,341 (40)***				2277,451 (50)***			
Nagelkerke	0,684				0,712			
N	1496				2068			

Note: ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001. Prevalence data as of 31.12.2002.

E: Contingency tables of couples' composition before and after selection

Table E1: Couples by the basic immigrant category and gender, count

		Women						
		A	B	C	E	F	G	Total
Men	A	0	24512	552	0	0	0	25064
	B	16145	47668	741	340	979	271	66144
	C	448	435	55	4	31	13	986
	E	0	376	3	0	0	0	379
	F	0	1292	36	0	0	0	1328
	G	0	326	19	0	0	0	345
Total		16593	74609	1406	344	1010	284	94246

A	No immigrant background
B	Immigrant
C	Born in Norway by two immigrant parents
D	Adopted (excluded)
E	Foreign-born with one Norwegian parent
F	Norwegian-born with one foreign parent
G	Foreign-born with Norwegian parents

Table E2: Couples by immigrant category and gender, count

		Women			Total
		Majority	Immigrant	Descendant	0
Men	Majority	0	26101	1015	27116
	Immigrant	17440	46421	1426	65287
	Descendant	791	936	131	1858
Total		18231	73441	2572	94261

Table E3: Couples with marital date, count

		Women			Total
		Majority	Immigrant	Descendant	0
Men	Majority	0	25607	1015	26622
	Immigrant	17174	28842	1370	47386
	Descendant	791	906	131	1828
Total		17965	55355	2516	75836